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ON COMMODITIES
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THE MEAT INDUSTRY

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carried out.

Communications describing the scope and nature of the investigation were made to the British Association for the Advancement of Science and the British Medical Association, and the results were published *in extenso* in the "British Medical Journal."

Summary of Results

"It was found that in all cases the administration of the 'BOVRIL' caused an immediate increase of weight. In subject C (human) it was found after the use of 10 grams of 'BOVRIL' the mean increase of weight was 129 grams, whilst in subject S, the mean increase after the use of 10 grams of the same extract was no less than 216 grams. Thus, in each series of experiments on the dogs it was found that the actual increase in weight varied from 10 to 20 times the weight of the dry solids added in the shape of 'BOVRIL' to the food, whilst in the human experiments the increase was even more marked."

Two Examples from the Table published in the "British Medical Journal"

EXPERIMENTS on HUMAN BEINGS.
10 GRAMS OF BOVRIL WERE USED IN EACH CASE.

EXPERIMENT I	Mean Weight during previous interval in Kilos.	Mean Weight during Feeding period in Kilos.	Mean Increase in Grams.	Nitrogen of Extract in Grams.
Subject S.	84·032	84·248	216	0·920
Subject C.	61·661	61·790	129	0·920

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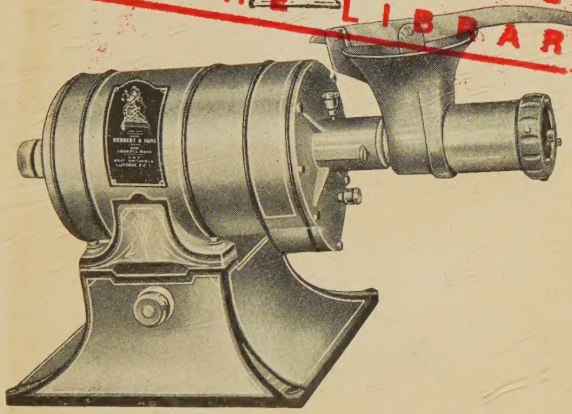

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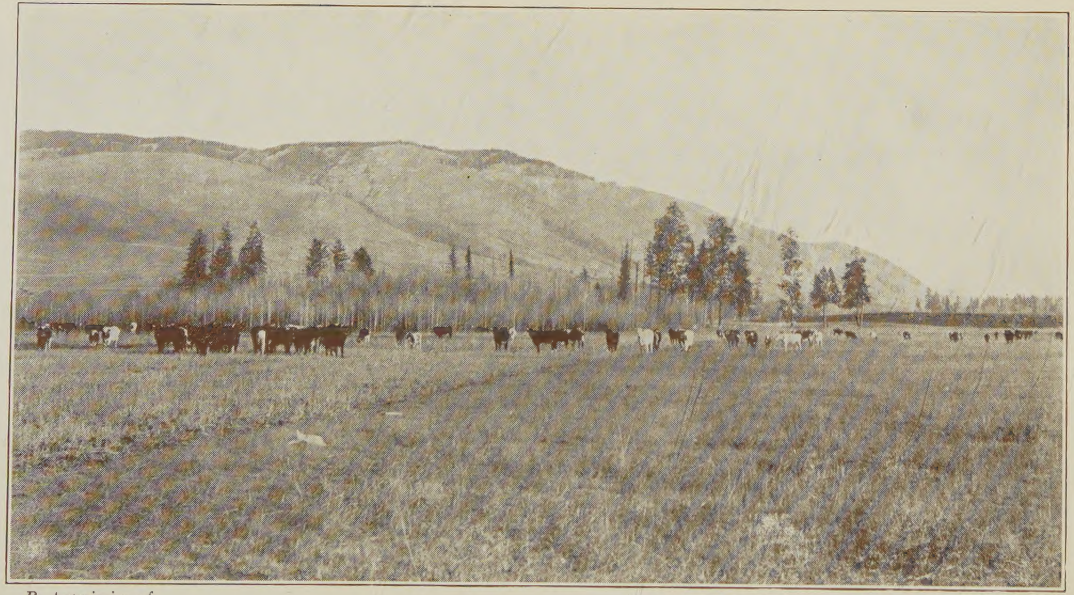

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ON THE COLD STREAM RANCH, B.C.

Frontispiece

PITMAN'S COMMON COMMODITIES AND INDUSTRIES

THE MEAT INDUSTRY

BY

WALTER WOOD

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PREFACE

The object of this little book is to give a comprehensive view of the gigantic meat industry, an enterprise which affects all classes in all countries. In dealing with such a subject help from various quarters is essential, and it has been readily given, either in the form of special information or permission to use existing matter. For such assistance, in printed and pictorial form, I gladly acknowledge my indebtedness to the Official Secretary, Australia House ; the New Zealand Steam Shipping Co., Ltd. ; the Clerk and Superintendent (Mr. H. W. G. Millman), Central Markets, E.C. ; the Medical Officer of Health (Dr. W. J. Howarth), Corporation of London ; the Secretary to the High Commissioner for Canada ; the Chief Traffic Manager (Mr. D. E. McCracken, O.B.E.), Mersey Docks and Harbour Board ; Messrs. W. & T. Avery, Ltd., The Birkenhead Corporation, and Messrs. W. Weddel & Co., Ltd.

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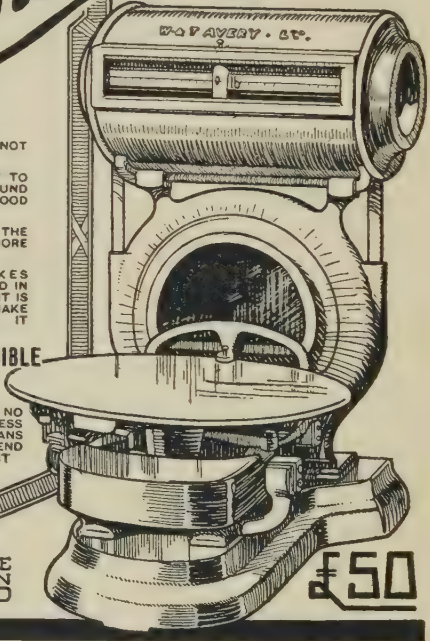

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THE MEAT INDUSTRY

CHAPTER I

THE VASTNESS OF THE INDUSTRY

The Psalmist sang of the cattle upon a thousand hills, and his imagery indicates the magnitude of the part which cattle played in the life of the remote ancients. For unnumbered ages before the Psalmist wrote man had depended on his herds and flocks for sustenance. With his oxen, sheep and swine, he could have much of his food supply assured and could also have means of transport and agricultural and other work. These domestic animals have been so long associated with human life that in dealing with man's existence few outside the ranks of scientists would think of man in any age apart from his herds and flocks ; they automatically come into the scheme of existence. And to-day, in all parts of the world, cattle, sheep and pigs are inseparable from a consideration of human affairs. In some form or other the meat industry affects every nation in the world.

Nothing more vividly conveys an impression of the vastness of that industry than a few statistics relating to it. Figures are not attractive to most people, but they are essential to a proper comprehension of the subject. The total number of cattle in the principal countries of the world on a " date nearest 1918 "—the latest statistics available—was 479,187,080, an increase of 10 per cent on the " date nearest 1909 " ; sheep

numbered 522,776,112, a decrease of 6.5 per cent; there were 173,319,879 swine, an increase of 22 per cent, and goats numbered 92,883,241, a decrease of 1 per cent.

Just as the meat industry affects every nation in the world so the question of the joint or cut or oddment of beef, mutton, or pork is a matter of prime concern to every householder of every sort, excepting those who, for various reasons decline to touch meat as an article of diet. Probably of all subjects relating to food there is none which makes a wider or more constant appeal to the communities than the problem of the joint or dish. And there can be no greater diversity in the form and treatment of the subject, for an ox can be roasted whole or in the smallest portions, and the same treatment can be given to lesser animals. There are innumerable ways of treatment and cooking, and there is a vast difference between the lordly sirloin of the rich and the refuse fragments that fall to the lot of the poor. There is almost as much difference between the West End and East End shops in which the meat is sold, the former providing palatial business premises, with the choicest of products, at corresponding prices, and the latter in many cases being no ornaments to the mean streets in which they are situated, and expose meat of unattractive appearance. Private enterprise has done much to bring into being butchers' shops which are models of equipment and service, while the growing rigidity of public control over food has done much to eliminate the unhealthy and the unwholesome in poor districts in Great Britain.

There has been a transformation in the meat industry in recent years, due to the enormous development of the system of importing chilled and frozen meat, apart from live stock intended for immediate conversion into

food. While not far beyond our own generation it was the home product only that was consumed within our own shores, yet that product was limited in supply, and great numbers of the working classes had meat but rarely, and then only as a luxury. To-day, with the vast imports from various countries abroad, and the splendid systems of distribution, the reverse is the case, and it is the exception even for the poorest to go meatless.

The meat industry has been the means of providing for individuals some of the most immense fortunes that have ever been made, not a few of these having been created in recent years in Chicago, in the actual business of meat preparation ; while great sums have been amassed by firms and individuals in other directions by breeders, raisers, or dealers. Perhaps of tradesmen the butcher is popularly supposed to be the most prosperous, as, in times of stress, he has been the most envied, as having it in his power to keep his own table well supplied when other boards were bare. The butcher in his shop was a mighty man indeed in war time, when anxious and expectant folk lined up in the detested and degrading queue. In many cases the notable exception to the resigned and dissatisfied crowd was the dispenser of favours, for such in truth he seemed to think himself. Times changed for the better when the free market came again, after the war, and the buyer was at liberty to choose his own butcher. In not a few cases he gladly made a change and forsook a butcher who had become little better than a bantering bully.

Such setbacks were inevitable in connection with the colossal task that arose in connection with meat distribution in war time ; but they were small in comparison with the advantages of a system which aimed at putting all on a fair basis, though the good purpose was not

always achieved. Innate greed and selfishness blinded some persons to the claims of their fellow creatures, and, if they could get meat, plenty of it, and of the best, they would get it. Such a thing was possible in some parts of the country, and it was done, and during times of the most intense stress, anxiety and shortness of food, these people, happily a small minority, kept themselves well supplied with good meat and other food, as well as drink. Their policy seemed to be to forget that a war was on, and as some of them lived in safe country districts, untroubled by the air raids, they succeeded, outwardly, at any rate.

It will be interesting, some day, at the right time, when the war is in proper perspective, to know to what extent the meat industry helped to win the war. The terrible strain, privation, and suffering that our men and their allies were called upon to bear were alleviated to an enormous extent by the wonderful way in which the fighting and auxiliary forces were fed and clothed. Good living was essential, and it was made possible by the fact that the allies had at their command by far the greater part of the world's meat supply. The entrance of America into the war definitely diverted to the use of the allies the enormous meat supply of the United States.

It was not until the summer of 1922 that the English market was cleared of the large stocks of old Australian beef which, the High Commissioner for Australia (Sir Joseph Cook) declared, through no fault of Australia, had been on sale for a much longer period than was expected. This meat was bought by the British Government during the war. When, in 1921, the Government closed its food control operations the sale of stocks in hand threw on the market a great accumulation of Australian beef which had been a long time in

cold storage and had deteriorated somewhat in quality. Consequently the reputation of Australian meat suffered, and owing to the low prices prevailing the Australian meat trade was threatened with extinction. This was an anxious and alarming situation, for that trade represented the very large capital of £15,000,000. But when these old stocks of meat had been cleared the trade was able to resume its activities on the pre-war basis, because representative meat of Australia, sound, fresh meat of first-class standard, resumed its place on the market, and was on sale immediately after its arrival in England.

The statistics of farm live stock for Canada make very interesting and instructive reading. On 15th June, 1920, cattle numbered 9,477,380, compared with 10,085,011 in 1919, including 3,530,238 milch cows, compared with 3,548,437 ; there were 3,720,783 sheep, compared with 3,421,958, and 3,516,678 swine, compared with 4,040,070. For all descriptions of farm stock, excepting sheep, the number in 1920 were fewer than in 1919. Sheep, which for many years before 1917 showed a decrease in numbers, showed a satisfactory increase. Cattle showed a decrease in all provinces ; sheep increased in all provinces excepting Manitoba, and swine decreased in all provinces excepting Prince Edward Island. The *Canada Year Book* for 1920 stated that compared with 1919 the values of farm live stock showed a considerable decrease. The average value per head for milch cows was $80, against $92 ; for other cattle $47, against $58 ; for all cattle $59, against $70 ; for sheep $10, against $15, and for swine $23, against $25. For swine per 100 lb. live weight the average was $15, against $16 in 1919. It was calculated that the approximate total value of cattle in 1920 was $561,500,000 ($708,821,000 in 1919) ;

sheep $37,263,000 ($50,402,000); swine $81,155,000 ($102,309,000).

Vast though the existing sources of meat supply are there are other possible fields, and to one of them a writer—E. Creighton Duff—referred in a short article published in *Chambers's Journal* for August, 1922. His contribution was "An Untapped Cattle Country," by which was meant the British Cameroons. In the interior of that West African region the innumerable herds breed in their millions, and "so cheap are the cattle that they can be purchased at under £3 apiece on the grass uplands, only ten days' easy march from the sea. But by purchasing them at the breeding grounds themselves, the price falls to a few shillings." The writer explained that to finance a scheme of the kind indicated would require large capital, if done on the great scale needed—if the Cameroons are to be treated as a serious source of meat supply (live or chilled) for Europe. "It is a great and wonderful country," he added, "gaping for development, as wide as the maw of Europe gapes for its meat." No doubt, if the enormous advantages indicated are available there will be no lack of enterprise on the part of capitalists in securing them. Material in the form of food which is to be had at such slight original cost is not likely to be neglected; but it so often happens that the first cost is by no means the last or least. A parallel may be found in the fish of the deep sea. It is there for the getting. There are no fees, no taxes, no restrictions; but the greatest cost does not arise out of shooting and hauling the trawl and actually securing the catches; it grows in many ways, and often reaches the climax of railway charges that absorb any margin of profit that may be left.

In South-West Africa there had been a substantial increase in cattle and small stock by the middle of 1922;

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AT RED DEER HILL, PRINCE ALBERT, SASKATCHEWAN

but unfortunately there were no markets for the stock, so that cattle and sheep were practically unsaleable, the result being that money was scarce and farmers as well as dealers were feeling the pinch. A Meat Commission had travelled the country by train and motor and had seen farmers and others. Though the Commission had not presented a report, it was assumed that arising out of their investigations was an advertisement which appeared in some of the newspapers, stating that the administration had concluded that it was necessary to encourage the export of meat overseas, and for this purpose to obtain the erection of cold storage works at Walfish Bay. "Since the number of animals available for export," continued the advertisement, "will, for some time to come, hardly be sufficient to attract the necessary capital without other inducement, the administration intends to assist the project, and invite persons, firms, or companies to submit for its consideration schemes for the installation of such cold storage works," etc. Referring to the meat question and the Commission, a correspondent in *The Times* Supplement of 24th May, 1922, stated that the particulars had to be submitted to the Secretary for South-West Africa before 30th September, 1922. "It is nearly twelve months since the Commission held its investigations," he said, "now schemes for cold storage have to be submitted, and this will occupy another twelve months, and if erection is decided upon another twelve months will elapse. In the meantime 'Rome is burning.'"

The amazing extent to which neutral countries prospered during the war by supplying the belligerents with meat was shown from time to time after the restoration of peace. Icelanders, with their sheep, quite apart from the immense shoals of fish available, were in a

position to do uncommonly well for their country, and it was no longer so much a question of Iceland for the Icelanders, as it was of the belligerents for Iceland. Some of the shrewd people in those high latitudes, especially the men who could speak English—and these were many—were able to do excellent business, both by remaining in the island and by journeying to Great Britain. Any mutton they could supply was welcome for the belligerents, and there was a heavy demand also for the wool. As a consequence, Icelanders enjoyed uncommon prosperity during the war, and as, in the countries which were at war, great fortunes were made by all sorts and conditions of men, not a few of whom never saw or heard a shot fired or knew of an air raid from experience, so in Iceland men benefited very largely out of the meat industry.

Denmark was one of the neutral countries that did uncommonly well out of the war; all the better, it seemed, in comparison with the reaction. A special correspondent of *The Times*, dealing with the bacon industry, said that Denmark's export trade, on which her prosperity depends, reached, in 1919, its lowest ebb for forty years. For instance, her bacon exports, which in 1914 were 147,000 tons, dropped to 1,000 tons. But Denmark was making a wonderful recovery. Mr. C. M. Sonne, President of the Royal Danish Agricultural Society, and formerly Minister of Agriculture and President of the Danish Senate, told the correspondent that he expected that for the year 1922 the export of Danish bacon would reach 115,000 tons.

Danish farming is done on the co-operative principle, and 85 per cent of Danish bacon is produced at co-operative factories. Veterinary inspectors are on duty at every factory, and the bacon must fulfil certain conditions before it receives the familiar "Lur" brand

permitting export. During the closing stages of the war pig-breeding was under a cloud, owing to the difficulty of getting foodstuffs, and the number of pigs fell from 2,497,000 to 513,000. When Mr. Sonne spoke, however, the number of pigs in Denmark had risen to nearly 2,000,000, an astonishingly rapid recovery, due to the fact that pedigree-breeding, on which the bacon industry is founded, had been maintained. Mr. Sonne told the correspondent that all the Danish bacon eaten in England comes from an Anglo-Danish pig produced from the Yorkshire boar and the Danish sow. Danish pigs get all the milk offal from the dairies, and also receive a share of sugar beet, which is a great feature in the diet of the Danish cows, Mr. Sonne claiming for these animals that they get the biggest food ration of all cattle. Every year each cow consumes more than seven tons of root fodder, while 500,000 tons of beet are eaten yearly. The sugar and other ingredients apparently act as an aid to digestion, enabling the cows to consume an unusually large quantity of oil cake. Mr. Sonne said that Denmark was doing her best to return to the normal production of animal produce. The experience of the war had intensified the wish to establish a self-sustaining agricultural production, and for this reason there was a movement to reduce the importation of feeding-stuffs, which before the war was equal to the value of one-seventh of the inland crop.

There can be no doubt that the war led to a repetition of some of the scandals of the time of the Crimea, especially in relation to the handling of surplus stores at the conclusion of hostilities. So long as four years after the Armistice there were still large dumps of canned foods in the war areas of Western Europe, and a case of a serious outbreak of illness caused by the use of some of this stuff was made public. The Dover Port

authorities seized and destroyed a consignment of 4 tons of corned beef which had arrived from the Continent in an unsound condition. In reporting the matter to the Council, the Medical Officer of Health (Dr. McMaster) stated that 14 per cent of the beef was decomposing and the remainder was unsound. The markings on the tins showed that the meat had been canned in July, August, and September, 1918, four years previously, and the cases had been recently relacquered. Nothing was said, presumably, as to the source of the poisonous food, but it would not, surely, be too severe a punishment of the offenders that they should be condemned to a substantial course of the beef that was meant for consumption by other people. The infamy of the transaction was heightened by the despicable attempt to freshen up the tins and so the more easily foist the poison on to the confiding buyer.

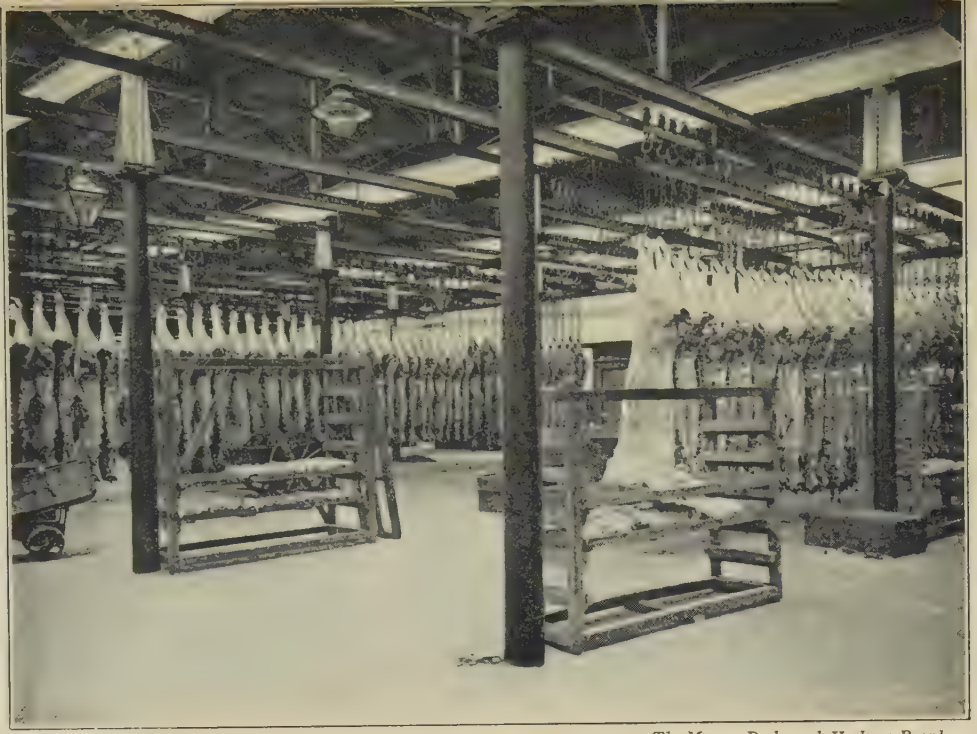
An excellent example of the live stock trade as it is carried on in Great Britain is afforded by the Mersey Cattle Wharf, controlled by the Birkenhead Corporation. The wharf, established in 1879, originally consisted of the Woodside and Wallasey Lairages, established to deal with the import of live stock. At that period the only country which exported stock to England was the United States of America, which sent, in 1879, 31,797 cattle to England. The number was a large one, considering the state of the trade at that time and the limited means of sea transport, but there were few who could foresee the enormous development of the industry ; indeed, so rapid was the growth that in eighteen years the number of cattle imported had risen to 281,740, with 286,611 sheep, the contributing countries being America, Canada, the Argentine Republic, Spain, Portugal, Chili, Iceland, and the Falkland Islands. Those figures relate to the year 1897, and to show how

vastly the numbers have grown the following particulars of arrivals at Birkenhead of the Irish and foreign animals during 1919, 1920, and 1921 are given—

	Irish.			Foreign.		
	Oxen and Calves.	Pigs.	Sheep and Goats.	Oxen and Calves.	Pigs.	Sheep and Goats.
1919	253,767	29,052	362,137	—	—	—
1920	253,245	31,050	341,350	—	—	—
1921	195,785	19,224	325,982	49,434	—	6,706

In an article on the live stock trade of Birkenhead, contained in the official handbook published by the Corporation, Mr. G. H. Ellis states that the slaughter-house and cooling-room accommodation increased until there were at Woodside twenty-one slaughter-houses, with a capacity of about 2,000 cattle a day, with corresponding cooling-houses capable of hanging 4,000 sides of beef; and at Wallasey thirteen slaughter-houses, with a capacity of about 1,000 cattle daily, with corresponding cooling accommodation. There is also a block of slaughter-houses capable of dealing with 7,000 sheep daily, and there is refrigeration accommodation in the two wharves for about 7,000 sides of beef. In the two markets, at any time, about 6,000 live cattle and 22,000 sheep can be exposed for sale.

The wharves proved of the utmost service during the prevalence of foot and mouth disease in Ireland, which had exported great numbers of live stock to Great Britain. The first Irish animals were landed at Wallasey on 12th July, 1912, and from that year the Irish trade remained at Birkenhead. During the war also the Mersey cattle wharf did invaluable service, under the direction of the Chief Traffic Manager (Mr. D. E.



By the courtesy of *The Mersey Docks and Harbour Board*

A COOLING ROOM

McCracken, O.B.E.) and the Board's Wharfinger (Mr. T. H. Platt), who was responsible for the enormous amount of work at the lairages. During the war years, 1914 to 1918, Mr. Platt and his staff handled for the nation 1,250,000 cattle, 250,000 pigs and nearly 2,000,000 sheep. The record week's landing of cattle was 17,101 head in November, 1914, and the record for sheep was in August, 1918, when 30,079 were landed in one week. Things were done on a gigantic scale indeed, for the record day's landing of cattle was in October, 1917, when 4,878 beasts were landed, and the record of sheep was in July, 1913, when in one day no fewer than 11,370 were landed. That was a very notable pre-war achievement, and showed that when the time of stress arose the wharves were equal to it.

The greatest care is taken in handling live stock at the stages, those from Irish ports being landed at the stage at Wallasey, from which they are driven into the reception lairage. At the lairage the animals are taken in charge by the drovers and fed and bedded during the ten hours whilst the Government veterinary staff have them under observation. Emphasis is laid on the fact that this vigilance is never relaxed, since the most important function of the wharves is the detection of disease and the protection of the health of the English herds. Subsequently the animals intended for inland places are sent off by train, those for sale at Birkenhead being driven over the run-way to Woodside, where the owners pen and expose them for sale. Buyers attend from all parts of the country, and the animals are slaughtered or transported according to requirements.

In addition to the preparation of carcases for the market there are, of course, the many important by-products. Hides and skins have to be trimmed, classed, and weighed and salted in cellars specially built for the

purpose, and special treatment has to be given to such edible offals as tongues, kidneys, heads, tails, skirts, hearts, sweetbreads, and so on ; tripes, intestines, fat, and blood—all are carefully dealt with and used in many forms, including medicinal and fertilizer. The Mersey Cattle Wharf is, indeed, " complete in every detail."

There are few countries in the world which are not contributory to the supplies of the British meat-eater. It is estimated that fifty years ago there were about 300,000,000 potential meat-eaters in the world, and that that number has been nearly doubled. The British Empire accounts for a large part of that gigantic total, for the Briton is essentially a meat-eater, and, as he is a good and profitable customer, the producers of the universe are anxious to capture and cater for him. So it happens that in addition to the home-grown product, which the Englishman, being a patriot and discriminating, prefers to all others, immense supplies are brought to the island country from far overseas. In North and South America, Australia, New Zealand, South Africa, and elsewhere, legions of animals are bred and reared and carefully tended in every way to the end that they may in due course reach Great Britain as part of the nation's food supply. And in considering that problem one has to bear in mind the important part that is played by beef in liquid form, like such products as Bovril. The preparation of these substances involves the rearing, handling, and disposition of cattle on the grand scale, the employment of extensive capital and the highest skilled labour and appliances. The familiar bulbous bottles represent a wonderful achievement in human enterprise and knowledge, and their contents rank high amongst the discoveries which have made strenuous life more endurable and pleasant. The pemmican of old days, that romantic preparation of thin

slices of meat, dried, pounded, mixed with melted fat and fruit, and compressed into bags, companion of the hunter and the trapper, and inseparably associated with the prairie and the braves on the war-path, has gone into the *ewigkeit*, like Hans Breitmann's Barty, and has been triumphantly superseded by "Alas! My poor brother!" In reducing the constituents of beef to the contents of one of the bulbous bottles chemistry has worked something of a miracle, and certainly has added a benefit to travelling and invalid mankind, to say nothing of meeting in convenient fashion the wish for a refresher.

CHAPTER II

SMITHFIELD

Visits to the Chicago stockyards and to Smithfield Market will give an understanding of the vastness and variety of the meat industry which is not obtainable so easily in any other way. In both places transactions are on a huge scale and enable one to realize how much energy and ability are needed for their successful conduct. Many interesting comparisons between the two centres can be made, not the least being the newness of Chicago and the antiquity of Smithfield. The famous city of the Middle West is of mushroom origin, but Smithfield is intimately associated with remote English history. Smithfield seems to have been with us always, but Chicago is a growth, a marvellous growth, of half-a-century. It claims to be the greatest railway centre and the chief hog and cattle market in the world. The fire of 1871, from the ashes of which Chicago of to-day arose, was caused, it is significant to note, by Mother O'Leary's celebrated cow, which capsized a lighted kerosene lamp, set fire to its wooden shed, and so began the fire which raged for a week and obliterated the shanty town which stood for Chicago. The people of the city believe that some day it will be the principal metropolis of the world ; meanwhile it has good reason to call proud attention to its place in the meat industry. Millions of people visit Chicago without ever seeing or going near the stockyards, and millions do the same with London and Smithfield, though many get a passing view of a small part of the wonderful market which is visible to those who cross Holborn Viaduct.

For nearly eight centuries there has been a cattle market at Smithfield. In the twelfth century there was a market for fine horses, peasants' wares, agricultural implements, and cattle, pigs, and other animals. At that time Smooth Field, as the locality was called, was outside the city gates, even in the suburbs, and on Fridays, when the market was held, barons, knights, and squires and citizens went to the market to buy horses for fighting, hunting, and other uses. For many, many years the market was in wet weather a mere morass ; indeed, hundreds of years passed between the establishment of the market and the putting of it into a generally usable place by paving. In 1614 the ground had been levelled and paved, at a cost of £1,600, a considerable sum for such work in those days.

Up to that time Smithfield had been a memorable place in connection with the life of London city. Being outside the city walls it was a favourite walk for the citizens, and as the gallows were there, and in constant use, there was never lack of sightseers when the hangman was busy.

The space occupied by the market had gradually grown to $6\frac{1}{4}$ acres, the space it occupied in 1834, and the accommodation was such that in 1846 more than 160 salesmen were employed, and there were sold 226,132 beasts, 1,593,270 sheep and lambs, 26,356 calves, and 33,531 pigs.

The enormous growth of the metropolis and the city especially, with the inevitable expansion of buildings, caused the market to become a nuisance and a menace to health. Slaughtering-places adjoined the market, and these became particularly obnoxious to a large number of citizens, especially as the city still remained to a large extent a place of residence. Public protest and disapproval resulted in prolonged investigation, the

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A MEAT MARKET

result being that an Act was passed under which Metropolitan Market Commissioners were appointed, with power to provide a new market, with necessary slaughtering places, etc., and on 11th June, 1855, Smithfield was used for the last time as a cattle market. On 18th July following, the new Metropolitan Cattle Market at Islington was opened in state ; but sales had begun almost as soon as Smithfield was closed. The new market occupied an area of 15 acres, being more than twice the size of the old Smithfield market, and was designed to accommodate 6,400 cattle, 1,400 calves, 30,000 sheep, and 900 pigs. A circular building was erected in the middle for the use of those having business with graziers and agents, and adequate provision was made for slaughtering animals. At the time of its inauguration the market's locality was known as Copenhagen Fields, but to-day it is far more widely known as the Metropolitan Market and Caledonian Market.

Thousands of people who are not interested in cattle know the famous Metropolitan Cattle Market at Islington, because they have visited it on Fridays, when the place becomes a " pedlars' market," and all sorts of bargains may be bought at the stalls and stands. To a much larger body the market has been known for many years as a most important centre in connection with the meat industry. During 1921 the total number of animals sent to the market was 138,118, compared with 182,452 for the previous year. There was a decrease of 45,981 beasts, and an increase of 1,963 sheep. Compared with the figures for 1913 the decrease in the number of beasts was 19,100, and of sheep 154,744. The number of nights' lairage charged was 323,812, compared with 312,750 in 1920, and 337,813 in 1913. The forage supplied to traders totalled 20,122 trusses of hay and 9,687 trusses of straw. It became possible in 1922 to

supply hay at 4s. and straw at 1s. 8d., compared with 5s. and 2s. 4d. a year previously. The number of animals slaughtered was 134,199, against 147,447 in 1920 and 142,865 in 1913. There was a decrease in the number of beasts slaughtered of 26,549 ; but increases in sheep and pigs of 4,881 and 8,975. The rigid nature of the supervision exercised in these days over meat was shown by the fact that the number of carcases found to be unfit for human food was 0·43 per cent, compared with 1·14 per cent in 1920. It is interesting to note that the business of the pedlars' market had practically doubled. A record business was done during the year, the receipts from the sales of stand tickets totalling £8,497, compared with £4,749 in 1920 and the small sum of £2,051 in 1913. Since that year the charges had been increased by 100 per cent, and doubtless the " merchants " at the pedlars' market, who, as a rule, know the value of the strange assortment of goods they offer, adjusted financial matters accordingly. On the Fridays which are beloved of bargain-hunters who frequent the Caledonian Market, in the hope of picking up some rare treasure for a few pence or shillings—and this can still be occasionally done by experts—there is no sign of the meat industry ; but often enough one may see some hopeful horse dealers putting animals through their paces, and sometimes selling them. To judge from the appearance of some of these dealers it would need great courage and confidence to engage in a deal with them. They achieve wonderful results from very unpromising material.

Even in the time of Dickens, Smithfield was a most noisome place, as he shows by his description of it, on market mornings, in *Oliver Twist* : " The ground was covered nearly ankle-deep with filth and mire, a thick steam perpetually rising from the reeking bodies of the

cattle, and mingling with the fog, which seemed to rest upon the chimney-tops, hung heavily above. All the pens in the centre of the large area, and as many temporary pens as could be crowded into the vacant space, were filled with sheep ; tied up to posts by the gutter side were long lines of beasts and oxen, three or four deep. Countrymen, butchers, drovers, hawkers, boys, thieves, idlers, and vagabonds of every low grade, were mingled together in a mass ; the whistling of drovers, the barking of dogs, the bellowing and plunging of oxen, the bleating of sheep, the grunting and squeaking of pigs, the cries of hawkers, the shouts, oaths, and quarrelling on all sides ; the ringing of bells and roar of voices, that issued from every public-house ; the crowding, pushing, driving, beating, whooping, and yelling ; the hideous and discordant din that resounded from every corner of the market ; and the unwashed, unshaven, squalid, and dirty figures constantly running to and fro, and bursting in and out of the throng ; rendered it a stunning and bewildering scene, which quite confounded the senses."

Contemporary illustrations show that in his description of the horrors of the world's greatest meat market Dickens did not exaggerate ; and to add to the picture and complete it one need only bear in mind that at Smithfield there were the shambles in which the animals were slaughtered and the many open shops in which the carcases were exposed for sale.

There is an enormous difference between the Smithfield of the time of Dickens and the market to-day. The buildings and the methods of business have changed out of recognition, and such a sight as the Central Avenue at its best would fill Dickens with astonishment and admiration, and he would be equally lost in admiration at the Central Poultry Market. All the evils of

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CATTLE READY FOR SHIPPING

which he complained have been swept away and the vigilance and ability of the City Corporation officials, by whom the market is controlled, keep cleanliness and orderliness at a high level. Another change is in the cold storage accommodation at Smithfield, under the floors of the market and about the premises. This system of preserving immense numbers of carcases has done much to revolutionize the meat trade and prevent such waste as is inevitable, under present conditions, in the fish trade.

A most interesting report on Smithfield was presented to the Chairman and members of the Special Markets Committee in February, 1920, by the Clerk and Superintendent (Mr. H. W. G. Millman). The report was in reality a review, giving a general survey of the market, and dealing with the very important question of transport and the general conduct of the trade of Smithfield.

The market comprises five distinct and separate buildings, four of which stand in alignment on a rectangular site a quarter of a mile long, and covering about six and a-half acres. There are two retail sections covering about three-quarters of an acre. The retail fish and fruit sections, which are rather smaller than Billingsgate, are on a separate site to the north of the General Section. All the buildings have ground floor space for shops or stalls, there is a circulating area for traffic and a first floor used as salesmen's offices. A visitor to the market is struck by the two Meat Sections, each of which has a main avenue 17 ft. wide and nearly 300 ft. long, running east and west. These avenues are intersected by three equi-distant avenues, 13 ft. wide and 240 ft. long, running north and south.

The thirty-one entrances to Smithfield Market can be brought into operation simultaneously to suit all ordinary " inward " and " outward " demands upon the

accommodation, and even extraordinary demands do not cause any anxiety on the part of the officials. But it is only rarely that anything out of the ordinary happens, Christmas, of course, being the period when the greatest pressure may be expected. One very great " push " was on Monday, 22nd December, 1913, when the day's supplies reached the enormous total of 4,390 tons. Of that day's supplies 70 per cent went to market shops or stalls before 6 a.m., " pitching " or " inward " deliveries beginning on the Sunday night at ten o'clock. It is scarcely necessary to say that for this tremendous task, carried out while most of us were comfortably in bed, all the gates of the market were in use. Most of the rest of that Monday's deliveries were " pitched " before eleven o'clock, with most of the north and south gates out of action for " inward " traffic after 5 a.m., owing to the requirements of " outward " traffic. Some understanding of the work involved in dealing with such a vast tonnage of food is to be gained in the fact that most of the meat that goes into the market must go out on the same day. There is no halting when such huge quantities of a perishable commodity have to be dealt with. But the real secret of the capability of the market to handle with ease even the enormous meat supplies of the metropolis lies in the fact that the aggregate of the length of the open frontage of the stalls is no less than a mile and three-quarters, or nearly a mile more than the length of the footways or pavements surrounding the market.

To be able to speak or write of " miles of meat " seems incredible, yet it is done concerning Smithfield. The market can actually contain more than fifteen miles of meat on the hanging rails. No fewer than 60,000 sides of beef, weighing about 9,000 tons, can be displayed or hung at one time in the market, while a similar weight

of frozen meat could be safely piled or stacked in the same space, and yet leave room for poultry and " other miscellaneous goods." The tonnage mentioned might well be considered, as it is the maximum load of the market's capabilities. So far the heaviest one-day load was that of 4,390 tons for 22nd December, 1913. During that year the " inward " and " outward " weight of produce actually marketed approached 1,000,000 tons.

The principal Metropolitan abattoirs, which are the main source of London killed meat, are only about three miles away, at Islington, so that horse-drawn loads can reach the market in half-an-hour ; while the Aldgate abattoirs, which are next in importance, are within an easy run of fifteen minutes of Smithfield. Here, as elsewhere, of course, mechanical transport is revolutionizing matters and making it easy to expedite the journey between the market and the public and private abattoirs, and the radius of the market's activities is rapidly extending, so that a few miles become of practically no consequence.

During the last thirty years cold stores have grown up in the neighbourhood of Smithfield, and these stores have now a capacity of about 13,000 tons, forming a valuable reserve supply and a necessary auxiliary to the meat market.

It has to be borne in mind that the " wholesale meat trade of London is a trade unto itself and has no counterpart, even for comparative purposes, in this or any other country." Most of those who are engaged in it are thoroughly experienced in the business, and in some cases it is really a family calling, like the law, or the Church. In 1913, a year which is very good for illustration, the number of stalls in the market was 364, and they were tenanted by 188 different firms. These firms were classed as carcase salesmen, importers, commission

By the courtesy of *The Birkenhead Corporation*

SHEEP IN READINESS FOR EXPORT

salesmen and jobbers or dealers. These classes are more or less interchangeable and capable of amalgamation, but of the jobber it may be said that in the pre-war scheme of wholesale meat distribution he bought and cut up supplies which exactly met the requirements of the retailers, and " he was a force of no mean value in the market."

In the year referred to the rents and tolls of the Meat Sections of the market aggregated £138,391 ; the commodities marketed aggregated 432,111 tons, so that the upkeep of the market was barely 6s. 5d. per ton, or ·034 of a penny per lb. Taking a flat rate of £50 a ton as the value of the commodities marketed in 1913 the turnover amounted to £21,605,550.

In commenting on the superintendent's report the Departmental Committee on the Wholesale Food Markets of London stated that they had examined witnesses representing the Corporation of the City of London, the various trade interests operating the wholesale and retail markets, and others. As to the allegation that some stall-holders had a controlling interest in stalls nominally occupied by other tenants, the representative of the retail traders stated that the practice existed and was extending in the case of certain foreign firms, and he suggested that if it were allowed to increase without a check these firms might be in a position to control imported meat prices by minimizing competition and restricting supplies. The superintendent stated that the greatest number of stalls held by any one firm in its own name was nine, tenanted by an English firm. The stalls are held on weekly tenancies, and although under normal conditions no goodwill in the holding is recognized by the market authority, evidence was given that large sums of money, amounting to as much as £15,000, had been paid as consideration

on a transfer of a business. On this subject the committee remarked: "The market authority does not require the payment of any premium or other consideration on the allocation of a new stall such as those which were made available some little time ago in the portion of the market known as the 'annexe.' It appears, however, that except under conditions such as the latter, which are not likely to recur very often, it is difficult for an applicant to obtain a stall in the market except on payment to an existing tenant of a very considerable sum of money. An interest in a stall may be acquired by way of partnership, the terms of which would, of course, vary according to the circumstances. In this way it is conceivable that a good salesman who was rewarded with a partnership might ultimately become the holder of a stall without payment of any kind. The market authority recognizes no goodwill of any kind, and the person paying for a stall or the share of a stall clearly does so at his own risk. At the same time we are of opinion that some limit should be placed on the number of stalls which can be held by any one firm, and also that the absorption of stalls by foreign firms should be carefully watched."

There is only one Smithfield, a market which, from many points of view, is unrivalled, and a collection of buildings of a unique character; but while London has in that market a centre of industry of which it has good reason to be proud, there are in many parts of the country markets which, in their way, are as notable. This remark applies especially to the establishments which are under the control of corporations or other local public authorities. Such concerns have proved highly successful, and have made it possible to carry out the killing of animals and the handling of meat under conditions which reach a high standard of efficiency.

Public abattoirs have brought about the disappearance of many undesirable private slaughter-houses, and public markets have made it unnecessary to have meat exposed for sale in unsuitable premises. The tendency is in the direction of steady improvement in the provision made for the preparation and selling of meat, and much of the success which has been achieved so far is due to the foresight and zeal of medical officers of health.

CHAPTER III

METHODS OF HANDLING

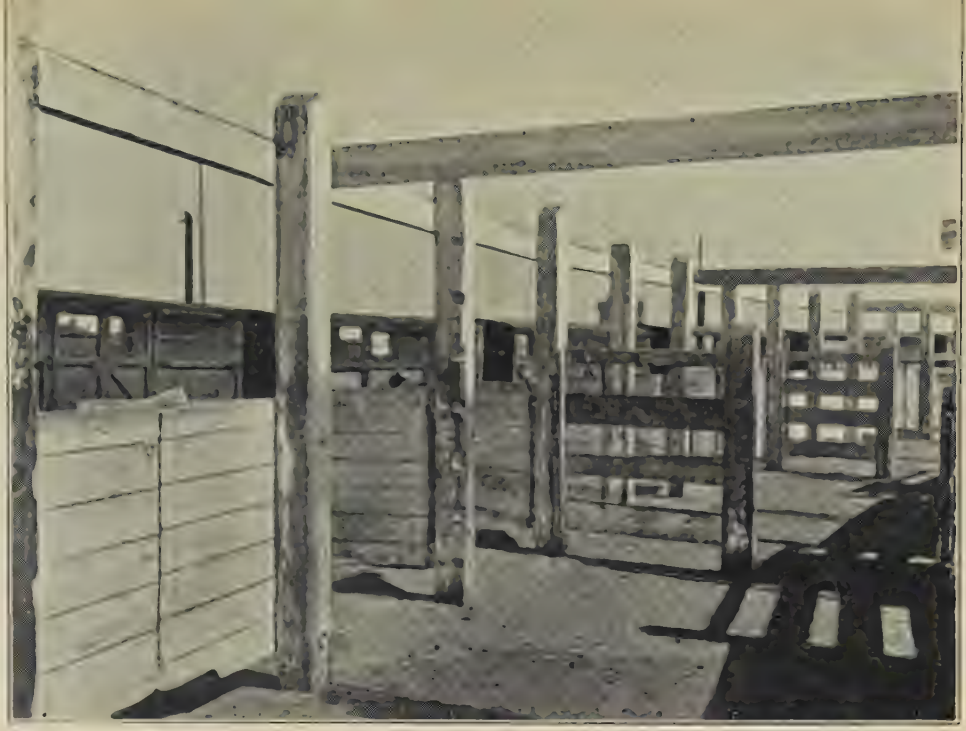
One of the most important features of the meat industry is the method of handling supplies. Much has been done in the direction of bettering conditions in this respect, but no one can visit even the best regulated centres of distribution without realizing how much remains to be accomplished. Despite everything that has been done at Smithfield to ensure clean and efficient handling of meat, the visitor will occasionally see things which might well induce a resort to vegetarianism. It is the human element that is at fault. Deficiencies are observed and steps are taken to remedy them; but too often ignorance and stubbornness defeat the best of well-meant efforts.

Medical officers of health throughout the country have done and are doing much to direct attention to existing drawbacks, and not only that, but to suggest or recommend remedies. This persistent effort is bearing good fruit, and undoubtedly in time there will be an end of present evils.

What goes on in the handling of meat at Smithfield is frankly shown by Dr. William J. Howarth, Medical Officer of Health of the City of London, who has done much to improve matters. Meat, he says, is bought at Smithfield by butchers from all parts of Greater London, and even from districts outside. It is removed from the market in the buyer's own carts or the carriers' vans, and the buyers or porters carry it from the stalls to the vehicles. In this carriage trucks are used, or persons' backs or shoulders, a method of transport

to be noticed almost at any time of day in a visit to the market, though, of course, the busiest time is so early that only a special visit will enable it to be seen. During necessary periods of waiting for supplies and arranging loading, meat is sometimes deposited on the footways and pavements. Inevitable disadvantages are the consequence, and there is the obvious risk of contamination by animals. "I have had occasion," says the doctor, "officially to complain of one more than usually gross instance of piling meat on the ground. . . The surroundings were foul." He insists upon the necessity of various recommendations for cleaner handling of meat being carried out, and remarks that it seems strange that while in the slaughter house due regard *must* be paid to the observance of cleanliness, and in the markets the traders recognize the advantages of cleanliness and order, and butchers in their shops encourage brightness and cleanliness, so little regard should be paid to the elementary rules of cleanliness in the interval between buying from the wholesaler and the reception of the meat at the shop.

The Ministry of Health took charge of the question of transporting and handling meat, and it was understood that that department was considering many recommendations from local authorities having for their object the improvement of existing methods. Public bodies had already done much to remove undesirable customs, but no one could visit a meat market or be in the busy streets of London without seeing a state of things that needed promptly remedying. The open carts in which meat is transported at the time of writing were relics of the earlier days of crude and careless methods. In crowded thoroughfares all sorts of foreign substances settled on the carcases, especially those which were fresh from the slaughter-houses and



By the courtesy of *The Mersey Docks and Harbour Board*

LOADING-OFF RAILWAY PLATFORM

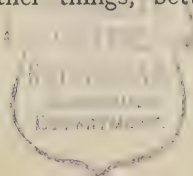
uncovered and unprotected. In the case of the imported article there was the protection of the cloth covering, but the fresh carcases had no such protection from thick dust and road refuse, and it was neither encouraging nor agreeable to witness the transfer from open carts to shops of the meat that was soon exposed for sale. Open windows by the pavement, too, especially in the densely crowded streets, allowed the meat to be contaminated in various ways, and indicated the necessity of cleansing before cooking, and of efficient cooking.

But, while there were to be seen many of these open and out-of-date vehicles, there were also on the streets many of the up-to-date and well equipped covered motor vans, in which meat could be conveyed with a minimum of risk of contamination. These vans were equal to the excellent railway stock specially provided for the conveyance of meat, numbers of which were to be seen at the big goods depots. As it was with the big railway companies so it was with the great distributing firms, whose resources enabled them to provide the best means of transit by road. It was with the smaller dealers that the cause of complaint mostly lay, people whose resources did not enable them to provide transport on the scale of the big business organizations, and in the poorest districts, primitive methods prevailed to an undesirable extent. But rapid advances in the right direction were being made, and there was good reason to hope that the Ministry of Health would be able to bring about reforms equal to those which had been undoubtedly effected in other directions in connection with the meat industry. Within quite recent years enormous improvements had been made in connection with the slaughtering of animals, and there had been swept out of existence positive

plague spots in provincial towns which were known as "shambles." In the heart of more than one large town there existed lairages and slaughter-houses which were an offence to civilization, and when they were gone one wondered that they had been allowed to remain so long.

Generally speaking, the tendency was to progress slowly, having due regard to established business methods and the difficulties in the way of many dealers of making such alterations as medical officers of health and public bodies were desirous of seeing undertaken. There was on the part of responsible bodies and officials a very keen desire to see adequate regulations enforced to ensure the proper handling of meat and its equally proper conveyance through the streets.

The question of slaughtering animals for food has been from time to time a cause of keen controversy and variety of opinion. To the skilful butcher the killing is a matter of mere business, to be done as expeditiously and humanely as possible, but to the majority of meat-eaters it is a thing to be left unthought of, allowing it to be an unpleasant necessity. The controversy has been revived of late in the form of a newspaper discussion on new and old methods, particularly in relation to the use of the pole-axe and the humane-killer. Mechanical killing has been extensively adopted in some countries, and there are butchers in our own country who make a feature of advertising the fact that all animals killed by them are killed by mechanical means. In unpractised or nervous hands the pole-axe is certainly a horrible weapon, and undoubtedly bullocks at times are struck repeatedly before they are brought down. It is claimed that by the enforced use of the humane instruments these mishaps, and this suffering and terror would be avoided, and that, amongst other things, better meat would



result. The Duchess of Hamilton, in a letter to the press, urged the abolition of the old methods and the substitution of the new, including the building of a model abattoir in London and the opening of special shops for the sale of humanely-killed meat " to meet the increasing demand of the public." Her plea had the warm support of a very large section of the public, especially those people who interest themselves in the abolition of all forms of cruelty to animals.

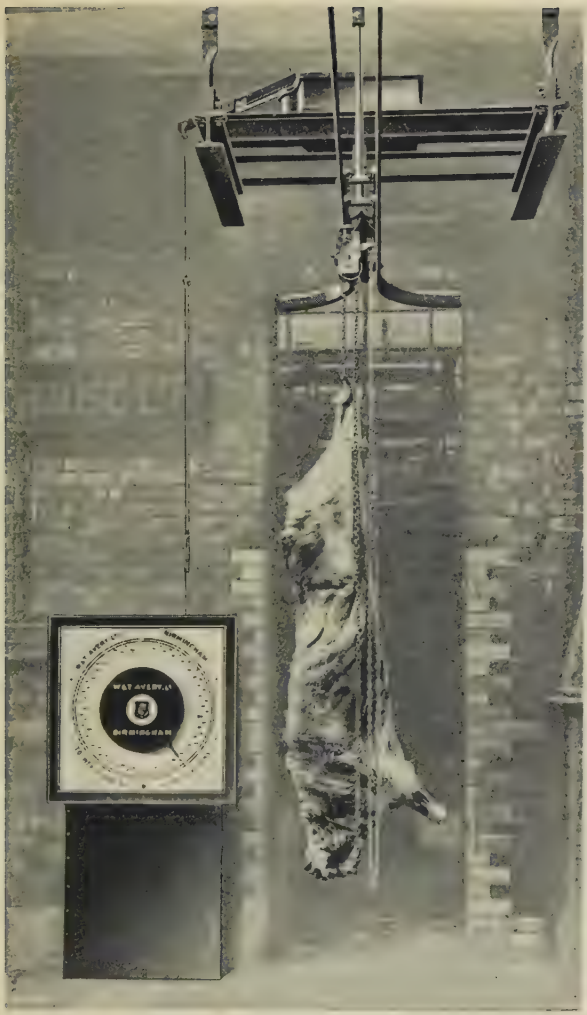
There was a good deal of controversy on the question of the keeping qualities of meat killed by the " stunning " and the " humane " methods. An interesting letter was issued by the Ulster Society for the Prevention of Cruelty to Animals, signed by the President (Lord Dufferin and Ava) and others, dealing with trials which had taken place in Belfast, owing to the society's agitation, to test the keeping qualities under the conditions referred to. The writers of the letter stated that from the food point of view, trials were not necessary, and that the report of the Markets Committee of the Belfast City Council of the result of the test on two mechanically-killed animals might be disregarded in view of the results obtained on the Continent and in the United Kingdom by the slaughterers of millions of animals yearly by mechanical means. The society pointed out that the report of the trials stated that the meat of the bullocks slaughtered by humane methods became " decomposed and malodorous " in the city abattoir in three days, but these significant facts remained : that the carcases of the bullocks from which the portions were taken for the tests were sold by the meat trader to whom they belonged six days after the trials, that they were cooked and consumed by some of the purchasers thirteen days after the trials, and that they were then in perfect condition.

By the courtesy of *Aerofilms, Ltd.*

AUTOMATIC STUNNING PEN

(Design of Mr. W. H. Medcalf.)

While enormous strides have been made in the handling and distribution of meat in London and the large towns, and progress is steady, there remain in many country districts the primitive methods which have been known for generations. The small butcher in a village which is, say, three miles from a railway station, will do his own buying, killing, and distribution, making his week-end round in a horse-drawn vehicle and supplying neighbouring villages with meat. In this respect some of the villagers are more fortunate than the town dwellers, for at any rate they get fresh meat, and usually of excellent quality, while the townsman has to be content with the chilled or frozen article. Londoners who have stayed in such country districts have, in some cases, become so admiring of the quality of the meat supplied by the village butcher that on returning home they have arranged for a supply of meat to be regularly sent to them by the butcher. The joints, fresh and adequately packed, reached their destination, forwarded by passenger train, in perfect condition. But this system of distribution by horse and cart is menaced by the motor and the ease with which residents in the country can now get supplies of meat from neighbouring large towns or London. The big companies in the metropolis have become keen rivals of local concerns, and certainly within the free delivery area of London there are many residents who deal regularly with the London stores, and find it to their profit to do so. The local tradesman naturally does not like this intrusive competition, but he does not always go the best way to work to meet and overcome it. Something more than objecting to and maligning them is needed to cope successfully with the highly organized and efficient methods of handling and distribution which characterize the great London houses.



By the courtesy of *Messrs. W. & T. Avery, Ltd.*

OVERHEAD CARCASE-WEIGHING MACHINE

In connection with the handling of meat cold stores play a prominent part. These stores have now reached a state of great perfection, and they exist not only in London but also in the provinces, and on a large scale. Reference has been made to Smithfield's cold storage accommodation, which is on an extensive scale. The concerns possessing large cubic capacity are the Port of London Authority, the London Central Markets Cold Storage Co., Ltd., Sansinana's Frozen Meat Co., Ltd., John Palmer's Store, and others. But it is at the docks that the Port of London Authority has most accommodation, possessing nearly 2,000,000 cubic ft. capacity at the Victoria and Albert Dock alone. At Nelson's Wharf, Lambeth, the Union Cold Storage Co. have a capacity of 1,119,000 cubic ft., not much less than a million at Tooley Street, and well over half-a-million at Cannon Street. At Hay's & Cotton's Wharf, Tooley Street, there is a capacity of 725,000 cubic ft., and at other London stores there is accommodation which gives a total capacity for the metropolis of 14,295,500 cubic ft. Here again is a wonderful example of very recent development in connection with the meat industry.

But the provincial stores can go even one better than London in one or two respects. For instance, the Union Cold Storage Co. have at the Alexandra Dock, Liverpool, 2,773,000 ft., 708,000 ft. at the Canada Dock, and other extensive stores, and in all Liverpool possesses 8,282,900 cubic ft. of storage. Manchester takes second place with 3,135,000, of which 1,580,000 ft. are accounted for by the Trafford Park Cold Storage Co., Ltd. ; and Bristol, Birmingham, Cardiff, Glasgow, Hull, Newcastle, and Southampton figure prominently in provincial stores. It is interesting to note that Bradford has a capacity of 264,000 cubic ft., of which 114,000 are Corporation Cold Stores, the larger half being possessed

by the Bradford Clear Ice and Cold Stores Co., Ltd.; while the neighbouring and larger city of Leeds, Bradford's great and somewhat pitying rival, has only 120,000 cubic ft., belonging to the Yorkshire Ice and Storage Co., Ltd. For many years the Bradford Corporation has been most energetic and enterprising in relation to the slaughtering of cattle and other animals, in perfecting the public abattoirs, and in improving the methods of handling meat and transport.

The enormous total of more than 36,000,000 cubic ft. of cold storage is available in the United Kingdom for holding frozen meat, more than 22,000,000 being in the provinces. This total is equivalent to 366,000 tons of meat, " if stowed solid, as on board ship," if, however, stowage were ordinary, allowing access to various sorts, the estimated capacity would be less by about 30 per cent. There are twenty-six cities and towns in Great Britain and Ireland possessing storage of 100,000 cubic ft. and over, and there are a very large number of provincial cold stores with a capacity of less than one hundred thousand feet.

Freezing works on an extensive scale have been established in the meat-producing countries. Australia, New Zealand, South Africa, Uruguay, the Argentine Republic and Brazil have very adequate provision in this respect, and are capable of dealing with immense quantities of meat.

Great advances have been made in recent years in apparatus for weighing live and dead meat. An invention which reduces handling and hauling carcases to a minimum is the Avery Automatic Overhead Carcase Weighing Machine, of which an illustration is given. This machine is fitted with Avery's Dial Indicating Mechanism, which enables the weight of the carcase to be known at once.

CHAPTER IV

LAND AND WATER TRANSPORT

THE conveyance of live stock by land and water is a matter of first importance, and one in connection with which much time and money have been expended in recent years. The old order, both afloat and ashore, has changed greatly for the better, and improvements in law, as well as the growth of more humane feelings, have created far more favourable conditions for live stock which has to make a journey either by land or sea. It is obvious that all who are concerned in the meat trade find it to their advantage to have the best means of conveyance, and so railway and sea travel is made as short as possible and officials see to it that proper steps are taken to secure the animals being delivered in good condition. While live stock is carried at all, either by rail or water, drawbacks are inevitable ; but they are becoming less serious as improvements continue to be made in steamships and trains. The days of carriage by slow and unreliable sailing vessels are, generally speaking, a thing of the past, and no one can regret their going ; while railway companies have greatly accelerated and improved the system of live stock carrying. As for the ocean carriage of cattle it has been bettered almost beyond recognition, even within the last few years.

The horrors of cattle ships were ruthlessly exposed by Plimsoll in 1900, when he appalled the public by his revelations and succeeded in getting legislation passed which very greatly improved matters. His book on cattle ships formed the fifth chapter of his second appeal

for our seamen, and he published it separately and out of its turn because he considered it to be of pressing urgency. He was impelled to this issue by the fate of the *Erin*, which left New York on 31st December, 1889, for London, with 527 cattle on board and a crew of seventy-two. She was never heard of, and there can be no doubt that she was overwhelmed by the tremendous seas which at that period prevailed in the Atlantic, and foundered. This vessel belonged to the National Steamship Co., which for two or three years had been entirely devoting itself to the live cattle and cargo service. A few months later another of the company's steamers, the *Egypt*, was burned at sea, and the National Line, which had met with many disasters, was bought by the Atlantic Transport Co. Finer and more modern steamers were put on the service, and vessels of the *Erin* class were either sold to foreigners or broken up.

The loss of the *Erin* undoubtedly brought matters to a head, and the contemporary exposure of the cupidity of steamship owners and the leaden-headedness of insurance companies determined public opinion in the right direction, and floating hells, so far as helpless animals were concerned, became a thing of the past. Bigger and far better vessels were employed, and to-day great and powerful and well-equipped steamers conduct this live cattle transport. But bad voyages are made, especially in winter, with inevitable suffering and discomfort, drawbacks that must exist so long as the transport by sea of animals intended for food is allowed.

An illustration of these present day experiences was given early in 1922. On 20th March the Donaldson liner *Orthia*, 4,225 tons, left St. Johns, New Brunswick, for Glasgow, with a general cargo and a large number of cattle. Terrific weather was encountered from the very outset of the voyage, violent easterly gales against

which the steamer could make scarcely any headway. The result was that the coal supply was absolutely exhausted and the fodder for the cattle ran short. Not many years ago it might well have happened that in this case it would have been a repetition of " Never heard of," but wireless enabled Captain Pearson, the *Orthia's* commander, to get into communication with the *Kastalia*, another Donaldson liner, bound from Baltimore to the Clyde. The *Kastalia* steamed up and took the helpless *Orthia* in tow, and not a moment too soon, for everything in the nature of fuel had been used, and the steamer would have been drifting helplessly about the Atlantic. The *Orthia* was towed into Queenstown, where she took in a fresh supply of coal and fodder, and went on to Glasgow. She reached Queenstown on 19th April, having been beaten and battered for thirty days on the Western Ocean.

American as well as English newspapers and individuals took up the case of cattle transport, profoundly moved by the revelations of suffering at sea. Special attention was given to the case of the *Erin*, and it was shown that her decks were so encumbered with cattle as to make her unmanageable in heavy seas. Altogether she carried 527—275 on her main deck and 252 on her upper deck. Such a great number of heavy beasts, located so far above the water-line, made her top-heavy and inclined to roll dangerously, while she could not be controlled, nor could she recover from the shock of a sea. The insurance company insisted that the *Erin* should not carry so many cattle, and its inspectors limited the number to 475. No objection was made to 275 being carried on the main deck, but it was considered unsafe for more than 200 to occupy the upper deck. The shipper, who was the largest exporter of live stock in the United States, was told that if he did

LOADING A CATTLE STEAMER FROM A LIGHTER, NEW YORK

not load the vessel to the 527 point he would be required to pay " dead freight " ; in other words, if he accepted the estimate of 475 he would have to pay for fifty-two which the *Erin* did not carry. This meant, for the fifty-two, a payment of more than 1,100 dollars. The shipper refused to ship the cattle uninsured, and as the insurance company refused to take a risk of more than 475 trouble seemed likely, but the steamship company finally compromised by itself agreeing to take the risk on the extra fifty. So, overloaded, on that last day of 1889 the *Erin* got out into the Atlantic, to add another to its mysteries.

Inquiry into the circumstances of the loss of the *Erin* brought to light many unsatisfactory features of the cattle-carrying trade at that period. Another National liner, the *England*, left New York with a thousand head of cattle, 400 more than she could possibly carry in comfort and security. She left at the beginning of winter, but she was fortunate enough to get good weather, and lost only eight head. Yet another vessel of the same line, the *Queen*, with a capacity of 450, carried 800, nearly double, so one cannot wonder that no fewer than ninety died on the passage ; while the *Spain*, also belonging to the National Line, with accommodation for only 575, took 1,000, of which poor beasts 150 were lost.

" The suffering inflicted on the wretched brutes is horrible," said a contemporary writer. " In winter they freeze on the upper deck : in summer they swelter in the hold, and perish for want of air. . . . Of 1,000 cattle packed like sardines (heads and rumps alternately), 200 died. What matters it ? No loss to the company. The insurance people must look to that. . . . The wretched sailors on board the average cattle steamer suffer but little less than the brutes that encumber

the decks, and on many vessels it is impossible to persuade the same crew to ship a second time. A tramp steamer in the business is a hell upon water. . . . It is said that the captains are opposed to these risks, but the companies keep them in subjection with threats of instant dismissal if they refuse to obey orders. Common sailors can say nothing. Theirs is a dog's lot. Once signed, they are at the mercy of their employer."

Captains, indeed, were powerless. Cattle were freight, and nothing more, and employers' orders had to be obeyed. No matter how horribly mutilated or how sick cattle might be, they were not to be killed—the insurance companies demanded that they should die a " natural death," and the captain had to sign a certificate to this effect before the carcase was thrown overboard. The insurance companies stipulated that every effort should be made to land cattle alive at Deptford, regardless of condition ; and failing this they refused to pay the insurance.

The determination of the insurance companies on this point was shown in a case which the courts had to decide. A cattle ship was caught in a hurricane, and the pens were at once destroyed and carried overboard. The liberated cattle, loose on deck, were hurled about by the violent motion, and lay writhing with broken backs, legs, and horns. The vessel being in peril, the captain ordered the animals to be thrown overboard. Many of them were dead, but neither the head cattleman nor the captain could swear that all the animals were dead, so the insurance company refused to pay the insurance. The exporters sued the shipping company, against whom judgment was given by the court, and they had to pay £6,000.

Plimsoll had no difficulty in accumulating a mass of the most terrible evidence, in support of his case, and

besides other instances that of a cattle steamer which left America on a September day with 360 head of cattle. When three days out she was caught in a cyclone, and when, twenty days after beginning her voyage, she finished it, she landed only fourteen head of live cattle. The rest had perished, after indescribable sufferings and horrors.

It is comforting to turn from this dreadful picture and dwell on the brighter side of the transport question. Given a good vessel, proper accommodation and attention, and, above all, good weather, there is nothing in the traffic to cause undue emotion, even in the sensitive, though no ordinary person would wish otherwise than to see the entire carrying of live cattle by sea abolished.

Some years ago, recent enough to be of use as present evidence, I travelled from New York to London in a cattle steamer, a fine, twin-screw twelve-knot vessel of a well-known line. We had on board more than 700 head of cattle ; but there was no overcrowding and no suffering or inconvenience. The voyage, however, was exceptionally good, the sea being perfectly smooth and the weather, though July and August, delightfully cool. The crossing took twelve days, yet when, at Gravesend, the cattle were transhipped to tenders for conveyance to Deptford abattoir they were in as good condition as when they came on board in New York. They were fine healthy animals, without exception, and as they were slaughtered within twenty-four hours of landing I can well imagine that they found many gratified buyers as prime home-killed English beef.

During that crossing I had many opportunities, of which I took advantage, of seeing how the cattle were treated and cared for, and of getting first-hand information as to the conditions prevailing in bad weather. In the case of our own ship there was nothing to complain

of, except the system itself. At no time was there any sickness or distress amongst the cattle, and the men who attended to their wants, "stiffs," they are called, had an easy time. The accommodation was fully

METHOD OF PENNING ON A CATTLE STEAMER

adequate, there was abundance of food and water and air, and an entire absence of pitching and rolling. Here, however, the conditions approximated to the ideal for an Atlantic crossing; but the stories I heard of winter weather and bad weather generally, which may come at any time of the year, clearly showed that

Plimsoll had not exaggerated facts in putting his case before Parliament and the public. The powerful and wealthy company which owned this vessel had many steamers engaged in the Atlantic cattle-carrying trade, some of them very much smaller than my own. The smaller steamers were far from being ideal for the purpose, and they have been superseded by bigger and better; but even in their case the company saw to it that there was no continuance of the state of things which filled the people on both sides of the Atlantic with horror and made them insist upon reforms.

To-day there is as much difference between the steamers engaged in the live cattle-carrying trade and those of a quarter of a century ago as there is between the 50,000 tons—and more—leviathans and the liners of even twenty-five years back.

An extensive trade of this description is conducted from Ireland to Great Britain. Here the steamers employed are naturally of a different type, but, generally speaking, they have been kept up to date and are of a high speed. Of course, the cross-channel journey from Ireland does not involve the same need for such elaborate preparations as are essential in the case of Atlantic traffic. Bad weather necessarily entails discomfort to the animals, either on the Atlantic journey or the short one across from Ireland, but the record of casualty to the animals whilst on board is conclusive evidence of their general well-being being provided for, our information being that the loss of animals at sea is infinitesimal compared with the total number conveyed. This is a very different state of things from what existed in the earlier days of cross-channel conveyance of live stock, when, owing to the small type and low speed of the vessels employed, the animals were subjected to considerable hardship in winter gales. I well

AN ATLANTIC CATTLE STEAMER

remember being in a coaster many years ago off the Land's End in a prolonged gale of uncommon severity, and steaming over a sea on which floated many carcases of cattle which had been swept overboard from a cross-channel steamer.

For a long period there has been a very extensive cattle and pig carrying trade between Ireland and Great Britain. Since 1836 the British and Irish Steam Packet Co., Ltd., has been engaged in providing facilities for this particular trade, and during those eighty-six years that have passed the company has steadily developed its vessels, both in size and accommodation, with corresponding benefit to the animals that have to be conveyed across a stretch of sea which can be very violent in its behaviour. At the time of writing two up-to-date specially designed passenger and live stock vessels were under construction at Ardrossan for the Company's Dublin and Mersey trade. They were due for completion towards the end of 1922. The Irish cattle trade had passed through a very adverse period because of an outbreak of foot and mouth disease in England—the most serious for forty years—the result being a diminution in the number of stock carried.

Sir Owen Phillips, the chairman of this company, pointed out that the Irish cattle trade is an important industry forming a big commercial link between Great Britain and Ireland, and anything adversely affecting it on either side is prejudicial to all who are engaged in the business. The unsettled condition of things in Ireland had added to the difficulties of the trade.

In addition to the British and Irish Steam Packet Co., amongst the powerful companies engaged in the live stock carrying trade between Ireland and Great Britain are the Burns & Laird Lines, Ltd., and the City of Cork Steam Packet Co., both of whose fleets provide ample

By the courtesy of *Coast Lines, Ltd.*

S.S. "CLASSIC" ON THE CORK AND FISHGUARD
PASSENGER AND LIVESTOCK TRADE

means for the rapid and safe conveyance of live stock between Irish and Scotch ports and Irish and British ports respectively.

It is of interest to note the many attempts which have been made to establish a system of slaughter of stock in Ireland with subsequent shipment of the carcases to Great Britain. This system invariably comes to the forefront when an outbreak of Foot and Mouth Disease in Great Britain brings about restriction of importation of live stock from Ireland, but, apart from this, serious attempts have been made to supplant the existing system of shipping on hoof by slaughter in Ireland, but up to now little or no progress has been made. In the opinion of the best judges, shipment of the animals alive for sale in British markets has so many points in its favour as to outweigh the advantages of the alternative establishment of abattoirs in Ireland for the slaughter of animals and subsequent shipment.

The chief ports of debarkation of Irish stock in Great Britain are Ayr, Bristol, Fishguard, Fleetwood, Glasgow, Greenock, Heysham (a development of Morecambe), Holyhead, Liverpool, Manchester, Silloth, and Stranraer. Ireland's having become a separate Dominion raised various difficult questions for settlement, the difficulties being apparent by a study of the live stock statistics for recent years. These statistics are given on page 55.

In connection with the transport of live stock and meat very great improvements have been made by the railway companies in recent years, and matters are far in advance of the state of things which existed even just before the war. Express meat trains are just as much a feature of the railway system to-day as are ordinary expresses and the commissariat and sleeping

arrangements attending their running. Refrigerator vans, specially designed for the purpose, are used for the conveyance of meat, particularly the imported article. This stock is made up into trains which are fitted throughout with continuous brakes, and are run daily for long distances at a high rate of speed. The fastest food train in Great Britain is a meat train which runs from Aberdeen to London in less than twelve and a-half hours, giving an average speed of forty-two miles an hour, and, indeed, putting this train on the same level as the ordinary Scotch expresses. Meat trains leave Liverpool docks in the afternoon and reach London in

CATTLE EXPORTED FROM IRELAND TO GREAT BRITAIN

Year.	Fat.	Store.	Other Cattle.	Calves.	Total.
1912	336,583	194,113	8,651	15,774	555,321
1913	354,953	693,374	8,152	53,142	1,109,621
1914	455,817	448,983	6,096	34,432	945,328
1915	363,837	441,282	9,459	27,009	841,587
1916	424,711	442,792	9,421	13,200	890,124
1917	405,047	447,541	10,286	25,992	888,866
1918	375,705	319,669	3,986	20,755	720,112
1919	531,842	224,728	—	8,681	765,251
1920	453,368	446,180	—	27,290	926,838

SHEEP AND PIGS EXPORTED FROM IRELAND TO GREAT BRITAIN

Year.	Sheep and Lambs.	Pigs.
1912	618,976	265,241
1913	659,255	200,296
1914	538,989	147,924
1915	489,657	179,058
1916	637,127	278,381
1917	763,111	199,331
1918	614,873	170,209
1919	507,145	196,313
1920	591,816	166,869

the evening, and throughout the country the same celerity of transport is shown. From the docks at various ports to important inland towns there is an efficient service, and when it is desirable to do so quick road transport is used, so that no time is lost in distributing meat of all descriptions. There are extensive movements also by rail of live stock which are meant for present or future food supplies, or are being taken to fresh pastures. From Scotland and the Cheviots, sheep and lambs are brought into England, and Irish cattle are sent to England to graze.

CHAPTER V

CHICAGO'S STOCKYARDS

NOWHERE else in the world can such an impression of the gigantic dimensions of the live meat industry be obtained as in the stockyards at Chicago. Being, much against my will, held up in that city, I gave the best part of a day to a visit to the stockyards. Though late in the year it was a warm, almost hot, day, and probably because of that fact a more lasting picture of the visit was left on my mind than would otherwise have been the case.

In the vast yards, far as the eye could reach on every side, were the pens containing cattle and other animals, by the thousand, the day's supply for the army of men employed in the buildings in killing and cutting up and making ready for home use and export. Immense numbers of railway sidings and railway trucks ran to the yards, and everywhere were seen other trucks, or cars, containing further supplies of the live stock. Cattle, sheep, pigs, in solid masses everywhere—a marvellous sight, but understandable when one had seen something of the prairies and pastures which had produced them.

There was no difficulty in entering the stockyards and seeing these enormous herds and flocks in pens, nor was there any obstacle in the way of watching them turned into beef and pork and mutton. You entered a reception room attached to the works of a great and famous firm and took a seat, like other people, men as well as women, and waited till a guide came. He was quite a young man, in a sort of uniform, and he

failed not to discharge the time-worn jest of everything about the hog being used except the squeal, though even that, he added, had been incorporated in the gramophone, so that literally nothing was lost.

From various platforms, or narrow galleries overlooking killing-beds and other departments, the visitor could see all that was going on, ending in the cold chambers where, suspended in forests of carcases, one could look upon what had been so lately live flesh and blood in the open sunshine. The whole business was so colossal, so mechanical, so methodical, so utterly soulless, that the impression of horror and disgust and pity which fill the ordinary observer in an ordinary English slaughter-house was entirely absent.

The most amazing and, in its way, fascinating sight, was that of the killing and cutting up of the hogs. In an endless procession they entered a pen in which a big wheel was slowly revolving. The pen was crowded with hogs from which, constantly, two or three men kept feeding the wheel. The men had chains with hooked ends, which were skilfully made fast round the hind leg of a hog, then the other end, hooked also, was slipped on to one of the rings which hung from the revolving wheel. As the wheel went round the hog was raised up, and having reached the top was passed on to a long sloping bar, travelling by the force of its own weight. Just outside the wheel-pen was a man whose sole work was to stick a long sharp knife into the hog's throat as it passed him on its journey. It was a steady monotonous jab with the weapon, to the accompaniment of a hideous chorus of yells, screams, and groans from the animals. Once there was a momentary stoppage, probably due to a hog sticking on the rod, and in a few seconds there was a cluster of about a dozen hogs. To them the sticker went, and with movements so swift

that the eye could scarcely follow him he had jabbed the jugulars of the bunch, and the hogs continued their journey towards long rows of men, each of whom was an expert at his work and did just one special thing in preparing the carcase for packing or sale as pork. The figure that remains most clearly in my mind is that of a gigantic negro, a splitter, whose sole work was to wield a big cleaver and cut the beheaded suspended carcases into two sections. The hog, cleaned and dressed, reached him, and in an instant his weapon had been raised, and with a blow that seemed a mere soft swish, the carcase had been cut into two completely separate parts, that fell away from each other more as if in obedience to a thought-of command than as the result of a skilful stroke of steel.

The cattle were in pens in a large room adjoining the killing-bed. Two animals were in each pen, and level with their heads was a narrow gangway along which moved a man armed with such a hammer as the strikers use when repairing London streets. He struck an unerring blow on the head, and immediately the side of the pen opened and the stunned animal fell down into and upon the floor of the killing-bed. Here it was hoisted up by a hind leg, by means of a chain, the throat was cut, and the rest of the preparation proceeded, each particular task being undertaken by a special man, who did nothing else but his special work. It was a strange thing to watch the man with the hammer walk upon his narrow gangway and do nothing but stun the big beasts ; but it was equally strange to watch the various experts at their work, doing all with as little emotion as a man might show in chopping firewood.

Before the tour was ended I had the young guide to myself. I had been reading *The Jungle*, and I asked him how much of it was true. He declared that that

wonderful and terrible work, dealing with the horrors of the stockyards, greatly exaggerated the evils of the packing-houses, and that at any rate the charges never applied to such a famous firm as their own. He assured me that whatever evils had existed had been swept away, and certainly there was nothing in what I saw to destroy the confidence of any spectator. There was extensive government inspection and control of the operations at every stage, and the sight of the vast masses of carcases in the cooling chambers inspired trust in the quality and cleanliness of all the meat that was there, in readiness for use in America and elsewhere.

It had been long recognized that the United States easily took first place in the organization and efficient handling of the meat trade, and that the business methods of the American packing-houses had reached perfection. These famous organizations were looked upon as the controllers of the destiny of the trade, and it was realized that with them rested the last word as to prices ; but even what seemed to be a rock-sure basis of soundness and stability was undermined by the trade depression in the United States following the war. Unemployment on a vast scale and the lowering of wages had an inevitable effect on the consumption of meat, and the result was a slump which gravely affected the packers. One of the first effects of the greatly reduced demand for meat in the United States was the re-shipping to the United Kingdom of the unsold balance of New Zealand mutton and lamb which had been bought from the British Government in 1920. Then followed the putting of an import tariff upon meat and live stock to the extent of 30 per cent *ad valorem* on cattle, and 2 cents per lb. on meat, with consequent reduced imports from Canada and Mexico. The tariff was imposed with the object of encouraging the production of live stock

and making the States self-contained so far as meat supplies were concerned. It is an interesting fact that while before the war the United States were large exporters of meat, after the war they became importers. Local consumption reduced war prices and created a surplus for export, but this state of things ceased to exist after the return of the American army.

The live stock returns on 1st January, 1921, showed that the number of cattle in the United States was 66,191,000 head, a decrease of 3 per cent compared with the preceding year, and there was a considerable decrease in the number of sheep, with a falling off in exports.

Chicago set the lead to packing-houses and remains unequalled in that respect. Other establishments on the same lines have been organized with great success, and a promising experiment was made at Drogheda by the Irish Packing Co., which organized an abattoir and chilling plant on Chicagoan principles. The trade regarded the experiment favourably, especially as the meat which was produced at the works was delivered in London and Liverpool in excellent condition ; but the Irish farmer did not give that support to the undertaking which might have been expected, both in his own interests and that of his country.

CHAPTER VI

THE EMBARGO

A QUESTION very closely affecting the meat industry, known as the Canadian Cattle Embargo, had been the subject of controversy for many years, and was brought to a head in 1922, largely through the persistence and courage of the late Lord Northcliffe.

In the spring of 1922 the question of the Canadian cattle embargo, which had been a sore subject for a long time, came to a head. Particular attention was called to it by Lord Northcliffe in a speech he gave at the Empire Press Union, of which he was the honorary treasurer. He spoke strongly of what he called the great slur placed on the peoples of Canada by the embargo on the importation of their cattle into Great Britain. He declared that the Canadian cattle were without disease ; Lord Ernle (formerly Mr. Prothero, President of the Board of Agriculture and Fisheries) had given a pledge that the embargo should be removed, and Canadians, who had the highest belief in British truths and justice, relied on that promise being carried out. Lord Northcliffe said that the slur and the pledge were the most important things to which his attention had been drawn during his tour of the world.

The speech attracted a good deal of notice in Canada and warm approval was expressed of Lord Northcliffe's attitude. The *Montreal Star* said : " If Great Britain believes that her cattle-raisers need protection against the Canadian ranch, that is her business, but we should not be human if we did not lose our tempers occasionally

when confronted with the admitted fiction that our cattle are excluded lest they infect British herds." A member of the Farmers' Party, then controlling the Prairie Provinces, declared that the embargo was an unfriendly act, and they did not understand it.

In connection with the speech an important statement was issued by the National Farmers' Union, who said that as some of Lord Northcliffe's remarks were likely to create a great deal of misapprehension it was desirable to point out certain facts. It was accordingly explained that " embargo " was a statutory provision which requires that cattle imported into the United Kingdom shall be slaughtered at the port of entry. It did not apply to Canadian cattle alone, but to animals coming from all countries. The provision had been in force for over twenty-five years, and was only enacted after long years of costly experience had proved its necessity. The " slur " was the implication that disease might be introduced into our flocks and herds if the compulsory slaughter provision were withdrawn in the case of Canadian cattle. The " pledge " was defined by Lord Ernle on 18th July, 1918, when he stated in the House of Commons that the " slur " would be removed, but that there was no suggestion that the " embargo " itself would be repealed. The Royal Commission which examined the whole subject in 1921 regarded the question of national policy involved as being outside their terms of reference, and offered no recommendation on that question, and the Cabinet, after considering all the evidence laid before the Commission, concluded that in the national interest it was desirable to maintain the existing policy. The Union added : " The case for the maintenance of our present policy has been placed before every member of Parliament in England and Wales by the National Farmers'

Union, and no serious attempt has been made to controvert that case."

The point was raised of Canadian cattle being shipped from American ports, and this brought to *The Times* an interesting and instructive letter from Miss E. Cora Hind, commercial and agricultural editor of the *Manitoba Free Press*, Winnipeg. She pointed out that it was not necessary for Canadian cattle to be shipped from American ports at any time of the year. Up to the close of river navigation, of course, all shipments would be through Montreal ; after that the port of St. John was open all winter and had been fully equipped for the handling of cattle. Sheds with accommodation for hundreds of head had been erected and were complete in every detail. Cattle could be unloaded direct from the cars into these sheds, and with equal directness from the sheds to the boats. As to ocean transit, Miss Hind said that all live cattle coming from Canada to Great Britain were tied, and unless the weather was extremely rough they put on flesh during the voyage. Rarely, even in rough weather, were any lost, while the percentage of actual loss by death of cattle was too small to be considered. She added that if any cattle required sympathy it was those shipped from Ireland to England, and anyone who had seen the dressed carcases of Canadian cattle and Irish knew that the Irish carcases often showed very much more bruising than those from Canada. The Irish Sea is noted for rough weather, and cattle from Ireland are not tied, and therefore much more in danger of being hurt or killed in rough weather than those even on the longer trip from Canada.

In the same issue of *The Times* Lord Bledisloe asked if our Canadian friends meant seriously to demand their "pound of flesh" for the temporary commercial

advantage of their own cattle-breeders, despite the grave anxiety and in face of the strong opposition of nine-tenths of the farmers of England and Wales. The material advantage to Canada consequent upon the disposal in Great Britain of 200,000 store cattle would be relatively small. Might not the ultimate political disadvantages of placing the interests of Canadian farmers above those of British farmers prove too big a price to pay for exacting the fulfilment of the so-called " pledge "—a war-time assurance given under conditions which had ceased to exist.

Meat traders urged the removal of the embargo, and in the House of Commons the Minister of Agriculture was asked if he could give figures to show to what extent, if any, the price of beef depended on the price of store cattle, and whether there was any appreciable increase in the price of beef in the years following the first imposition of the embargo in 1892. This question was put on 23rd May, 1922. In reply Sir A. Griffith-Boscawen pointed out that there was no evidence to show that the price of store cattle determined the price of home-killed beef, just as the price of wheat and certain other agricultural products was mainly governed by the price of the imported article. In 1921, for example, store cattle were expensive in the spring months, but the price of fat cattle and meat fell in the autumn. Canadian cattle were excluded from this country in 1892. Official statistics of meat prices were not collected at that period, but records published in trade papers indicated that the average price of beef at the London Central Market during the five years after this was about a halfpenny a pound less than in the five years before. Asked if it was suggested that because store cattle were dear now there would be cheap meat in the autumn, the Minister definitely replied : " What I

suggested was that the price of stores had nothing whatever to do with the price of meat."

The Labour Party, at their 1922 Conference at Edinburgh, condemned the Government for its refusal to carry out the recommendation of the Royal Commission on the Importation of Canadian Cattle. They also urged the necessity of removing the embargo against the importation of store cattle, as far as the Dominions were concerned, thereby improving the nation's fresh meat supplies and helping in the agricultural development of the land, as well as providing increased employment for slaughtermen, hide dressers, and other by-product workers. A speaker—Dr. Duncan Carmichael, of the London Trades Council—declared that the embargo was placed on Canadian cattle on a fraudulent charge. Canada had a clean bill of health, yet 90 per cent of the meat sold at Smithfield was imported frozen meat. Mr. T. McLellan, of the Birkenhead Trades Council, who spoke of the need of replenishing our own stock, said that 50 per cent of our "milkers" were diseased, but before we could slaughter them we must have cattle from overseas to take their place. We wanted free fresh meat, and not the cheap rubbish that was now being imported. The Conference felt strongly on the subject, and the resolution of condemnation was carried with only a small minority against it.

The controversy was carried a decided step further by the publication in *The Times* of 7th June of a letter from the Minister of Agriculture. He said that the National Federation of Meat Traders had issued a statement objecting to a remark he had made that what some of the advocates of the removal of the embargo were aiming at was to be able to import Canadian animals three-quarters finished, keep them a few weeks in this country, and then sell them to the public

as prime English or Scotch beef. The Minister said : "I am not surprised at their perturbation. Your readers are, no doubt, unaware that two witnesses before the Royal Commission—namely, Mr. Isaac Stephenson, of the National Chamber of Trade, and Mr. J. Edwards, who is President of the Union of London Meat Traders—admitted, in their evidence, that it was a common practice at Smithfield to import meat killed in Holland and Denmark and sell it as 'home-killed' to the confiding British public. The Commissioners were evidently rather astounded at this mis-description and cross-examined Mr. Edwards closely on the subject. All that the latter could say by way of exculpation was that, of course, the description was not 'absolutely correct.' Comment is needless. For two years past the members of the Federation have been posing as philanthropists, and stating that the reason why they desired the removal of the embargo was to benefit the poor consumer and give him cheaper meat. They have succeeded in hoodwinking a number of excellent people, and they probably think that 'cheap meat' would be a good election cry. It is high time that this little conspiracy was exposed."

At this time—the summer of 1922—the normal period of quarantine for cattle imported into Canada was : From Newfoundland, United States of America, and Mexico, no quarantine ; from the United Kingdom, thirty days ; from other countries, ninety days ; but since the previous February the importation of cattle from the United Kingdom into Canada had been totally prohibited, while at that time the importation of all cattle from Switzerland was also prohibited. Before the total prohibition the entry of store cattle was prohibited, except from the bordering countries of France, Italy, Germany, and Austria, and in such cases

facilities were given for grazing purposes by special arrangement with the Cantonal authorities concerned, though the Minister of Agriculture had no information that any quarantine was enforced.

After discussion, the House of Commons resolved that the time had arrived when the embargo on the importation of Canadian cattle should be removed. The resolution was carried by 247 votes to 171—a majority of 76. In the debate the Minister of Agriculture said that he could take no other course than to vote against the resolution. The House of Lords carried, without a division, a resolution that the House accepted the conclusions of the Royal Commission that the Dominion of Canada was free from cattle plague, pleuro-pneumonia, and foot-and-mouth disease, and was of opinion that steers from the Dominion might be admitted as store cattle to Great Britain, subject to precautions by means of quarantine being taken.

Subsequently the Colonial Office announced that the Government had been considering the steps to be taken to give effect to the resolutions. They had been in communication with the Canadian Government, and it had been arranged to hold a conference of representatives of the two Governments in London at an early date. It was hoped that as a result of the conference it would be possible to arrive at the basis of an agreement which could be embodied in a bill to be introduced into Parliament during the autumn session.

At the time of this controversy there was an election campaign in the City, and one of the candidates, Sir T. Vansittart Bowater, Independent Conservative, said he was particularly enthusiastic about his advocacy of the abolition of the embargo on Canadian cattle, which he and the Chairman of the Cattle Markets Committee of the Corporation had urged for months past. " There

are magnificent cattle in Canada," he said, " and their importation into this country would do an enormous amount of good." He had been round Smithfield Market and had found that most of the dealers were in favour of the removal of the embargo.

Finally the cattle pledge was redeemed, and a cause of misunderstanding and vexation between the British and Canadian peoples was removed. The representatives at the Cattle Conference agreed upon the conditions that should apply to the importation of cattle from Canada. The agreement was ratified by the new Cabinet, which came into office with Mr. Bonar Law as Prime Minister. Its main provisions were that Canadian store cattle, that is animals born and reared in Canada, and rendered incapable of breeding, were to be admitted under the following restrictions—

Shipment must be from a Canadian port and direct to a port in Great Britain.

For three days immediately before shipment and during the voyage the animals were to be kept separate from other animals and periodically examined by a veterinary officer of the Dominion. Immediately before shipment a thorough examination was to be made by the veterinary officer, who would certify that the animals were free from disease, and a daily examination was to be made during the voyage.

The animals were to be landed at specified landing-places, and there examined thoroughly by the Ministry's veterinary officers. Movement from the landing-place was to be controlled by licence in the same manner as the prevalent movement of imported Irish cattle, thus securing detention of the animals on some farm or other premises for six days, though they might pass to such premises through one market.

At the Conference the Canadian Ministers undertook

that as soon as the necessary order authorizing importation of Canadian breeding stock was in force, the Canadian Government would modify their conditions of importation of British animals, so as to make the Canadian and British conditions reciprocal. The Conference agreed to the view that legislation on this subject must be capable of adaptation to the requirements of the other parts of the British Empire.

Early in April, 1923, the importation of Canadian cattle began. The first consignment reached Manchester and when put up for auction attracted buyers from all parts of England. Excellent prices resulted from keen competition, prices varying from £22 to £32 a head. This gave an average of from 9½d. to 11d. per lb., and showed little difference between the price of Canadian cattle and animals from Ireland and the home stock. It was expected that the import trade would develop so rapidly that very soon after the first consignment arrived about 3,500 cattle would reach Great Britain from Canada.

CHAPTER VII

REINDEER MEAT

In recent years that remarkable animal, the reindeer, has been used in growing numbers as an article of food. A striking development in this direction took place in the autumn of 1921, when the Hudson's Bay Company landed at Amadjuak, Baffin Island, a herd of domesticated Norwegian reindeer, the object being to establish reindeer depots in Northern Canada and to develop the meat supply of the native population and for southern markets. The Company's steamship *Nascopie* was specially employed to convey the animals, numbering 628, across the Atlantic. Rough weather caused some losses, but the herd generally was landed in good condition, a tribute to the care and experience which had been shown in selecting the animals.

The collection and dispatch of the herd was a reminder of an important experiment which had been carried out some fifteen years previously by Dr. Wilfred T. Grenfell, on behalf of the Royal National Mission to Deep Sea Fishermen. The Mission had established a branch of its work in Newfoundland and Labrador, with Dr. Grenfell in charge, and as the work developed Dr. Grenfell realized the great possibilities of the reindeer as an invaluable all round animal in those desolate countries. The reindeer were bought by the Secretary of the Mission (Mr. Francis H. Wood), and it was he who acted on behalf of the Hudson's Bay Company in purchasing the herd that was sent out in the *Nascopie*.

Selecting and buying the animals were matters

requiring sound judgment and experience. An excellent selection was finally made and it was possible to avoid some of the mistakes which had been known in connection with the earlier experiment. The herd that was first sent out did well for some time, while in charge of the Lap herders, but when the Laps returned home the herd got out of hand and difficulties arose in controlling and maintaining the animals. But it had been shown that reindeer were a very welcome addition to the food supply of a people not too well off in that respect, and the herd of 1921 gave promise of most encouraging results.

In referring to the reindeer, Captain E. A. Watson, Chief Animal Pathologist, Dominion Department of Agriculture, expressed the opinion that it seems to be admirably suited for the stocking of the vast non-producing lands of Northern Canada, which are known to possess considerable natural resources; but the unsolved problem of food and transportation has made this an inaccessible field of exploitation up to the present time. "The reindeer industry," said Captain Watson, "may be the means of opening the way to progress and development in the Northland." He points out that the Hudson's Bay experiment was not the first instance of importation of reindeer, apart from Dr. Grenfell's undertaking. The United States Government in 1898 imported reindeer into the Yukon territory for the relief of miners, and drove a herd up into Alaska for the relief of shipwrecked crews of whaling vessels.

The reindeer shares with the ox the distinction of being exceedingly useful in many ways, apart from the food supply. The ox in many countries, and to some extent in England, is largely used for working purposes, while the reindeer has for many generations provided the Laps and other people with milk, skins, and clothing,

before becoming an article of food. In the countries in which it is mostly used reindeer meat is sold at about the same price as the best beef. In England smoked reindeer tongues have been long acknowledged as a delicacy, though the reindeer meat itself is not generally available. During the summer months in Lapland every care is taken to see that the reindeer grow fat and get into good condition for the hard winter. A cold rainy season suits them best, Captain Watson points out, for there is then abundance of the moss on which the animals thrive so well. In September, when the return journey to the winter ranges of the interior is begun, the reindeer should be in a thoroughly good condition, with a slab of back fat, to be used up during the long, lean months of winter. It is said that a full grown male deer should have in September a slab of back fat 3 in. or more in thickness.

The experiment of the Hudson's Bay Company aroused great interest, and warm hopes for its success were expressed. The Company left nothing to chance, but took all possible steps to establish the herd on a sound basis. Only the very best animals were chosen, and these were accompanied by selected Lap herders and their families to Baffin Island. Captain Watson was sent to Norway by the Department of Agriculture, Ottawa, to co-operate with the Hudson's Bay Company in guarding against the introduction of disease with the imported animals, and in giving the expedition a fair start and a prospect of success, the Department being interested in the reindeer industry, as in all other branches of live stock. " Such an enterprise is a costly one," Captain Watson observed, " and the Hudson's Bay Company is to be congratulated on the courage and thoroughness with which it has undertaken it."

The Governor of the Hudson's Bay Company (Sir

R. M. Kindersley), at a General Court, held on 30th June, 1922, referred to the introduction of reindeer into Baffin Land. He said that more than two years previously the company were approached by Mr. Stefansson, the well-known explorer, with a view to introducing reindeer into Baffin Land. A separate company was formed in which the Hudson's Bay Company held the greater part of the capital, and a lease of the southern half of Baffin Land was secured for the Dominion Government free of charge for fifteen years, after which there was to be an annual rent of $11,390. In deciding to carry out the experiment the company were actuated by the knowledge that the project had the active support of the Government of Canada, and the company also felt that it was desirable that if the work was to be undertaken it should be done by them, who possessed a thorough knowledge of the natives in that region, rather than by some corporation who had no such knowledge, and who might conceivably interfere unnecessarily with the hunters of fur-bearing animals.

As to the possibility of reindeer raising, it was estimated that the total area suitable for raising the animals in Northern Canada was 1,000,000 square miles—enough to graze no fewer than 50,000,000 reindeer.

Dr. Grenfell has been largely instrumental in starting a company in connection with the far-reaching International Grenfell Association for the development of the reindeer industry, a scheme in which he has great confidence. Reindeer, he says, makes excellent venison, and that there is a market for it is proved by the fact that Alaska exports about a hundred thousand carcases of reindeer yearly. "You can measure the possibilities from the fact that in Alaska," he said, "the Government herds of reindeer number about half-a-million head." Following the Hudson's Bay Company's

venture in Baffin Land the new company proposed to take in about a thousand head. Dr. Grenfell went with Stefansson to Ottawa to see the Canadian Government about the matter, and to persuade them to adopt the same attitude to the reindeer question in the east as they already did in the west. The interview resulted in the Government taking over his herd.

In further reference to the reindeer, Dr. Grenfell said : " At Indian Harbour was staying Mr. F. Lawrence, my old-time friend, whom I ran across both in Montreal and California while I was working at the reindeer herd. We have been working together, and now Mr. Lawrence has started a real company on a business basis to herd reindeer here in Labrador, as they do in Alaska. Something like 100,000 reindeer were slaughtered for market in Alaska last year, and Labrador has many advantages over the Alaskan ground. We can ship meat much later in the fall, and we are infinitely nearer the large markets ; New York is a direct water transportation. There are tens of thousands of miles of pasture eminently suitable for deer, because the same deer in the wild state have always been there, and are still there, only depleted by the indiscriminate slaughter. Mr. Lawrence has secured pasture rights and protection from the Newfoundland Government, and will, we hope, secure also other help to get the project going, as has been granted by the Canadian Government.

" One thing he told me I purposely mention here, as an illustration of one of the most potent but least exposed sores of modern economics. This scheme is a sound one, it is an honest one ; and it should succeed. It is a valuable one, because it develops the country for the world's use and makes the useless ground useful to man. It supplies the most wonderful skins, besides the proteid food, and it gives employment to many and

helps to make a people. To start it some money is needed. From the nature of it, however, returns will not be immediate. But if the money invested were carefully handled, all who out of good faith or good will did invest, would be paid well. But there is the trouble with modern civilization—lots of men are living rich, luxurious lives by profiteering in the basest way off genuine efforts like this. The labouring herders and hard-working men, like Mr. Lawrence, come and live in the hard surroundings to make the plan go; but the whole thing was nearly made impossible by the avarice of the New York men who wanted to float the company.

"This is not pleasant writing, but after the company was almost committed the promoter demanded $50,000 as his share—quite enough to ruin the whole scheme. The plan calls for 1,000 deer and their herders to be landed on the splendid pastures selected, and $50,000 should be almost the cost of that whole piece of work."

"Mr. Lawrence bravely threw the whole thing up, and formed an entirely new company in Chicago. This was a piece of advertisement, and I hope a grim joke for Chicago, but it will save the plan from ruin. Even here, where men have to work hard to earn $5, we can understand the underwriter getting, say, $500, or even $5,000, but $50,000, if permitted, would have imperilled the whole scheme. If such things go on in the financial world within the law, is it any wonder that conflict between capital and labour is so rife? In this instance our men would do all the work, our managers have all the anxiety, and the New York big men get all the money."

In dealing with his general activities in Newfoundland and Labrador, Dr. Grenfell made the interesting statement that the wool used in his industrial training schools has to be imported from Canada, as sheep in

Newfoundland and on the Labrador coast would be killed by the dogs. Goats were, however, imported and spread along the coast, chiefly to provide milk. The strain used were Toggenburg goats, of which a benefactor in Chicago, Mr. Charles Stevens, made a valuable gift of a number for breeding purposes. These animals had to be specially conducted by a young woman, who had great difficulty in finding board and lodging in St. John's for her pedigree charges, a circumstance which indicates the obstacles that have to be overcome in solving the problem of existence in the desolate regions where Dr. Grenfell's important work is done.

" I would introduce foreign animals into the country ; for instance, the reindeer," declared Johnson, to the irrepressible Boswell, who added that the project had been realized. Sir Henry Liddel, who made a spirited tour into Lapland, brought two reindeer to his estate in Northumberland, where they bred ; but it was not long before the race " unfortunately perished." Johnson mentioned to Boswell the extraordinary size and price of some cattle reared at Ashbourne by Dr. Taylor, who was their host. Boswell rode out with the doctor and surveyed his farm, on which he was shown a cow which the doctor had sold for 120 guineas, and another for which he had been offered 130. Boswell mentioned these sums as if they were exceptional, and he appears to have been impressed by them. It would have been interesting to have his views on the enormous prices paid for cattle in our own times.

CHAPTER VIII

IMPORTED MEAT

THROUGH the enterprise and resource of the great steamship companies it has been possible to import into this country vast quantities of chilled and frozen meat, in excellent condition, from far countries. For many years "Canterbury" lamb has been an established favourite, and has been relished despite its voyage of 12,000 miles, so much enjoyed, indeed, that people have been heard to declare a preference for it over home produce. On that point it is interesting to note that in not a few quarters there has existed an impression that the Canterbury was the ancient English city of that name and not the New Zealand town. Certainly, before the war almost unimpeachable imported lamb was obtainable ; but during the war, and for a long time afterwards, there was reasonable ground of complaint of the quality of this particular class of meat, and certainly of the prices that were charged for it. At times the lamb was wretchedly poor, but matters in this respect improved, and at the time of writing there was a return of something approaching pre-war conditions. Steamship companies were getting into their stride again, and bigger ships, faster voyages, and improved methods of preservation made it possible for the public to be better served than had been the case for a number of years. The utmost use was made of the enormous resources of the British Dominions in developing the British meat trade, and special efforts were made in the press and on public platforms to encourage inter-trading between the mother country

and her children. The war had done much to bring British peoples together.

For many years the New Zealand Steam Shipping Co. had been largely engaged in the carriage of frozen meat from New Zealand to England. When the company, which originally used sailing ships, decided to adopt steam they chartered vessels to open the service and continue it until their own ships could be built. Amongst these chartered vessels were the well-known *Ionic* and other steamers belonging to the White Star Line. In *My Life at Sea*, Commander Crutchley stated that these ships were fitted with refrigerating chambers and plant, and when released by the company were chartered by the Shaw Savill Co., " so that the New Zealand people had done their best to popularize these ships, and the opposition reaped a certain reward from their efforts. Also, it let in the White Star Line, which was no inconsiderable item. Some time previously the Union Co. had had the chance to tender for this particular traffic, but I do not think the directors fully grasped the future of the frozen meat trade. I know that Captain Dixon had not regarded it with any favour, but it was a great chance missed." Crutchley had accepted the command of the *Ruapehu*, a notable ship of her day, belonging to the New Zealand Co., and he related that the whole of the forepart of the vessel was fitted as a cooling-chamber for the carriage of frozen sheep. They had begun to take in carcases when suddenly it was reported that the freezing engine had broken down. An expert was telegraphed for to Christchurch, and on coming shook his head and said that nothing could be done, as the bedplate of the engine was broken and no insurance company would take the risk of a frozen cargo with a patched up engine. Crutchley believed that the damage was wilful and could have been made good ;

but it was settled that they were to come home with a general cargo, and no frozen meat. "As the freight was then 2d. a pound, it will be seen that this was a serious loss."

When Crutchley wrote of the *Ruapehu* she was the show ship of her trade. She was built at Glasgow in 1883, and was 389 ft. long and 46 ft. broad, with a gross tonnage of 4,163. In due course she was succeeded by another steamer of the same name, but much larger—a twin screw vessel nearly 8,000 tons, with a speed of 14 knots. The new *Ruapehu* was one of a fine fleet of similar vessels, specially adapted for their passenger and frozen meat trade. To-day the traffic is maintained by a fleet of powerful and fast vessels, including some of 11,000 tons.

Very great advances have been made in the equipment of the steamers for their special purposes, and there are none of the drawbacks and disappointments of the eighties to endure. Enormous numbers of frozen carcases are brought in a single ship, and it is a remarkable sight to watch the unloading process. Frozen meat and produce are discharged in London by means of electrically-driven mechanical shoots and carriers, the invention of Captain G. H. Noakes. The elevator is used for bringing the carcases from the hold to the deck of the steamer, and the chute carries the carcases from the deck to the quay. There are also electrically-driven carriers for conveying the carcases from the base of the chute to the end of the quay, where they are sorted for delivery to their destinations. These machines are provided with canvas covers, to protect the goods from sun and rain.

There had been a long controversy on the question of New Zealand meat control, and it reached a definite stage in the spring of 1922, when Mr. Nosworthy, the

Minister of Agriculture, announced that the Dominion Government had decided to accede to the recommendation of the Meat Producers' Control Board, and to allow Messrs. Armour & Co. (Australasia) Ltd., to begin business in New Zealand. The Minister added that, throughout the long controversy in the past, the New Zealand Government had maintained the clear and definite attitude of safeguarding the interests of the producers as against those of the meat trusts, but now that the establishment of the Board had created a new position the Board believed that with the powers at its disposal it could safeguard the producers' interests, and Messrs. Armour had agreed to place themselves in the hands of the Board regarding the handling, pooling, shipping, and marketing of their meat. No export licence would be given, but Messrs. Armour's meat would be exported under the control of the Board. Simultaneously with this announcement it was stated that Mr. J. S. Jessep, a member of the Meat Board, was proceeding to London in connection with the appointment of an expert to represent New Zealand producers in England.

"The best of the best is good enough for me," is a saying which applies with peculiar appropriateness to meat. It has to be uncommonly good imported meat that can hold its own with even inferior home produce, and such is the English temperament that even the poorest people will show real gifts in choosing the best and letting the worst go by. A visit to any meat market, on a Saturday night in particular, will give an insight into the zest and shrewdness of both men and women buyers, and incidentally is likely to afford an exhibition of that gift of bluff and badinage for which some butchers have won renown.

A striking illustration of what might be called high

taste in lowly quarters was given by an experiment which was made by a gentleman at Dunmow in 1921. A campaign was being conducted to bring down the retail price of butcher's meat, and the gentleman conceived the excellent idea of ceasing to send his fat sheep to market, and killing them on his own farm, with the object of supplying his workpeople with cheap mutton. In itself the enterprise was of the loftiest description, but in practice the plan proved Utopian, for the labourers all wanted the prime joints, and as this meant that only the odd pieces were left for the gentleman's own household he was forced to abandon the scheme.

The war familiarized vast numbers of people in Great Britain with bacon of unprecedented badness, though harassed housewives were glad to get—and only in limited quantities—even that substitute for wholesome food. With such a terrible conflict raging there could not be much ground for complaint as to quality of food, but when, long after the Armistice, bad bacon was still unloaded, there were many bitter protests and calls for amendment and reform. People clamoured, too, for lower prices ; but their voices were raised in vain, and even four years after the war ended it was necessary to pay heavy prices for eatable bacon. For prime back the charge at big stores was 2s. 6d. a pound Wiltshire, 2s. 4d. Irish, and 2s. 3d. Danish. These were nearly three times the pre-war prices.

By way of showing what could be done with American methods and how good American bacon could be made, American packers tried an experiment in May, 1922, which was not only interesting but successful. The normal journey between Chicago and London for bacon was twenty-seven days, so that packers were handicapped in their efforts to get the right sort of bacon on the English market. They set to work with

characteristic energy, and managed to convert live pig into mild bacon which was in London eight days after the killing. Thirty tons of the bacon were sent by special trains from Chicago to New York, where automobile trucks rushed the consignment to the White Star liner *Majestic* and got it on board just before she sailed. The *Majestic* steamed across the Atlantic at an average speed of 23½ knots an hour, and the bacon was delivered after what was said to be a world's record for rapid transit. The packers hoped to establish an average of ten days for conversion from live stock in Chicago to bacon on the London breakfast table.

This experiment attracted considerable public attention, and not a few who watched it expected more notable results than any which became known. As a specimen of hustle the enterprise was notable, but it was obviously of a character that in the existing circumstances could not be maintained. It might be put on the same level as the journeys that are made between England and the Continent by aeroplane, admirable for emergencies, but not suitable for ordinary demands. It is pretty obvious that general business conditions would not allow of the swift and costly transport mentioned, but the undertaking was interesting as showing what energy and resources can accomplish, and probably it was the forerunner of more stable rapid transit between Chicago and London and provincial markets. Such experiments, too, always serve the very useful purpose of putting the home firms on their mettle and compelling them to take special steps to preserve their own interests.

These home interests are very considerable, as the calling to mind of some of the famous firms will show. Reference, as a case in point, may be made to Messrs. C. and T. Harris & Co., Ltd., who are the largest bacon

curers in England, and kill from 2,500 to 4,000 hogs weekly, and to Messrs. Palethorpe, who manufacture sausages on a truly wholesale scale. Business houses at home, in the front rank, have a reputation which is certainly not excelled, and most often not equalled, by any foreign competitor, and all other things being equal they are not likely to suffer from any attempt to undermine or lessen the wide sphere of their activities.

In their efforts to readjust matters after the war, the Germans made strenuous attempts to get Argentine meat into their country. There was a two-fold object in this, the one being to reduce the price of meat in Germany, the other to get further employment for German vessels and so help to re-establish the shattered mercantile marine. The Trade Commissioner for the Argentine left Berlin for Buenos Aires in connnection with further negotiations on the subject. A provisional agreement between the Argentine and German Governments had been concluded, providing for the delivery by the Argentine of 100,000 tons of live cattle and 100,000 tons of frozen meat, to be carried in German vessels. By adopting this scheme it was hoped to reduce the retail price of meat in Germany, the calculation being that the Argentine meat could be sold in Germany at about one-third the price prevailing when the Trade Commissioner left for South America.

Though no new purchases were made by Germany in 1921, it was calculated that about 40,000 tons of frozen meat were imported by the Germans in that year, this being only half the quantity imported in 1920. Of the 40,000 tons, part reached Germany under contracts made in the autumn of 1920 and was meant to serve as a " winter reserve," but a good deal of this meat arrived " unsold," though some was subsequently

re-exported. It was pointed out that this case illustrated the extraordinary difficulties attending dealings with the Continent in 1922. During the first half of the year shippers could not sell frozen meat because the German Government were disposing of their " winter reserve " at a price in marks representing about 50 per cent under original cost in foreign value, while in the last quarter of the year 1921, after the mark had slumped, it was impossible to get a price in marks which would represent anything like the world value of frozen meat. When the mark continued to depreciate and bore no resemblance whatever to the mark of pre-war times, the situation became still more acute, and finally the position became impossible. By 6th November, 1922, the new " record " was established of 31,000 marks to the pound sterling, which was more like comic opera finance than ordinary business dealing.

The question of the relative value of English and imported meat was raised in an amusing and instructive fashion in the House of Commons in June, 1922. A member, Mr. Shaw, suggested that the best imported meat should be substituted for British-fed and home-killed beef and mutton in the dining-room of the House for a week, to give a practical demonstration of " even the best qualities " of meat which the great mass of the people were, under existing conditions, compelled to accept. It was a reasonable and proper suggestion, but the Chairman of the Kitchen Committee of the House of Commons (Sir J. Agg-Gardner) had more solicitude for the country's representatives than to accept it. In replying to the question he said he feared he could not adopt the suggestion it contained, " as it would be scarcely courteous to the House to make hon. members the subject of gastronomic experiments." What particular harm there could have been in the

experiment, and why it should not be carried out in the case of gentlemen of whom a good many at home must have been well acquainted with chilled meat, was not explained. Perhaps that very knowledge, acquired in the privacy of the domestic circle, where criticism is untrammelled, was the principal reason for declining to adopt the suggestion. Be that as it may, the passing of the opportunity of such a week's test was at least something of a reflection on the merits of imported meat. It is only fair to add, however, that the decision announced by Sir J. Agg-Gardner was reached " without any disparagement of frozen meat."

At this period, the middle of 1922, the frozen meat trade was admittedly in " a bad way." The five big packers in the United States in 1921 showed an aggregate loss of £20,000,000, and one was reported to have made a loss of over £6,000,000. In the national interest the necessity for developing the Overseas Dominions' meat trade in preference to other foreign markets was strongly urged.

Very large fortunes have been made out of the imported meat trade, and one was left by the late Sir William Nelson, first baronet, who was for many years one of the leaders of the industry, and was formerly Chairman of the Nelson Line and of the Nelson Steam Navigation Co. He left estate of the gross value of £992,751, of which the net personalty was sworn at £831,499. At this valuation the duties on the property were about £285,000.

The particulars of a £4,000,000 sterling meat deal were made known in October, 1922, in a circular issued by the directors of the British and Argentine Meat Co. The document made known the terms of an offer which had been made to buy the whole of the company's shares. Ordinary shareholders were offered 65s. a

share, and preference shareholders 32s. 6d. a share, payment to be made in cash on 15th November. The agreement was made with the Western United Investment Co., Ltd., payment being guaranteed by Lord Vestey and Sir Edward H. Vestey, from which it was assumed by the market that the Union Cold Storage Co., with which these gentlemen were prominently identified as directors, was interested in the deal. The directors of the British and Argentine Meat Co. were to retire, and to receive compensation for loss of office of a sum of £30,000. The Board, having agreed to sell the whole of their own holdings, strongly recommended all the shareholders to accept the offer, and this they did, the deal being concluded a short time after the circular was published. It was recognized that apart from the question of price there was no doubt about the fine character of the business of the company. Previously the two undertakings, Nelson's and the River Plate Fresh Meat Co., which constituted the existing concern, had known some big ups and downs; but latterly operations had been markedly successful, and the magnitude of the business was shown by the fact that in 1921 the turnover reached the immense sum of about £20,000,000.

Vast though this deal was it was not on such a large scale as one previously recorded, for the year 1919. The state of things with regard to Australasian frozen beef had become very unsatisfactory, and enormous stocks had accumulated in the United Kingdom and in Australia and New Zealand. Importers were quite unable to keep down stocks, and the Government were strongly urged to make a material reduction in prices. In view of the existing state of affairs and the pressure brought to bear upon them, the Government resolved to get rid of their unsold stocks, provided buyers could

be found. Negotiations began, and finally the stocks as well as the stocks of "cut" ewes, were sold outright to Sir William and Mr. E. H. Vestey. According to Messrs. Weddel, neither the precise quantity transferred nor the price paid was made known, but it was believed that the total payment involved was over £5,000,000. Putting aside Government purchases during the war, which were necessarily of a magnitude such as had never been previously known, this was by far the largest individual transaction in frozen meat ever recorded. It may be added that Sir William Vestey, the first baronet—the title was created in 1913—was managing director of the Union Cold Storage Co., Ltd., and head of the Blue Star Line. He became Lord Vestey and Mr. became Sir E. H. Vestey.

Particulars of extraordinary interest relating to the frozen meat trade were given by Messrs. W. Weddel & Co., Ltd., in their thirty-fourth annual report, 1921. In considering this subject it is to be remembered that the term "chilled" beef is applied to beef carried at a temperature of 29° F. to 32° F., and arriving in this country in a soft condition, ready for immediate consumption, whilst the term "frozen" beef is applied to beef carried at a much lower temperature, say 10° F. to 15° F., arriving perfectly hard, and requiring to be thawed before it can be used. Mutton and lamb are always carried in a frozen condition. For most traders the year 1921 was disastrous, so that they shared in the universal collapse. The extent of the *débâcle* was shown by contrasting January values with those of December, which showed an all round shrinkage of just 50 per cent. Retail prices had not shrunk to anything like the same marked extent, and there was little doubt that customers generally had not enjoyed the full benefit of the very material wholesale reductions.

The slump naturally caused consternation amongst producers in all parts of the world, and various remedies were suggested, according to the circumstances of the producing countries.

During the twelve months which ended on 4th June, 1921, the number of cattle and sheep in the United Kingdom increased by 122,600 and 866,400 respectively. New Zealand alone furnished us with as many carcases of mutton and lamb as were supplied by the home flocks.

All previous records were exceeded by the importations of 1921. Excluding live stock and fresh killed meat, amounting to 26,330 tons, no less than 917,414 tons of beef, mutton, and lamb were imported into the United Kingdom, compared with 810,415 tons in 1920, 528,354 in 1919, and 120,257 in 1913. With a home production estimated at 1,056,400 tons, 47 per cent of the total consumption was imported in 1921. Of the meat marketed in the London district 80 to 85 per cent came from overseas ; in other words, only one Londoner out of seven could now reckon upon having British-fed meat to eat. Ten years ago little more than one-third of our meat supply was imported ; to-day the proportion is practically one-half. Compared with the records for 1919 and 1920 the Continental trade was a disappointment, and evidently the Continent was not able to absorb nearly as much meat as was hoped for after the establishment of peace. The total imports of beef from all sources represented, say, 1,748,000 carcases, against 2,973,000 home-grown cattle estimated to have been killed for marketing in 1921.

The table on page 90 gives the total weights of the various descriptions of frozen and chilled meat imported into the United Kingdom during the years shown.

TOTAL WEIGHTS OF FROZEN AND CHILLED MEAT IMPORTED

From.	1913.	1919.	1920.	1921.	Increase or Decrease in 1921 compared with 1920.	Total Import Value 1921.	Value per ton.
	Tons.	Tons.	Tons.	Tons.	Tons.	£	£
Australia . . .	150,666	69,044	154,743	104,732	— 50,011	7,193,076	= 68
New Zealand . . .	122,234	121,209	197,305	263,665	+ 66,360	20,937,998	= 79
Argentine	409,211	242,128	364,808	444,539	+ 79,731	33,277,407	= 75
Uruguay	29,717	21,322	41,774	67,093	+ 25,319	4,921,938	= 73
United States . . .	74	42,809	11,233	8,903	— 2,330	803,050	= 90
Other Countries . . .	8,355	31,842	40,552	28,482	— 12,070	2,570,175	= 90
Total . .	720,257	528,354	810,415	917,414	+ 106,999	69,703,644	= 76

SMITHFIELD MARKET QUOTATIONS

	Australia.			New Zealand.			Argentine.		
	1913.	1920.	1921.	1913.	1920.	1921.	1913 .	1920.	1921.
Mutton per lb.	4d.	9¼d.	7½d.	4¾d.	9¼d.	8¼d.	4⅛d.	9¼d.	7½d.
Lamb ,,	5¾d.	1/0½	11½d.	6⅝d.	1/0½	1/–	5⅞d.	1/0½	10¾d.
Frozen Beef (Fores) ,,	3¼d.	8¼d.	4⅜d.	3¼d.	8¼d.	4½d.	3¼d.	8¼d.	5½d.
Frozen Beef (Hinds) ,,	4d.	11¾d.	6½d.	4d.	11¾d.	6½d.	4d.	1/–	9d.
Chilled Beef (Hinds) ,,	—	—	—	—	—	—	5d.	1/–	10d.

Smithfield Market top quotations in 1921, compared with the prices for 1920 and 1913, averaged over the twelve months are shown on the opposite page.

The prices ruling at the close of 1921, however, were much below the average recorded above, being, indeed, actually 50 per cent lower than in January of that year.

Reference has been made to the extensive cold storage accommodation at Smithfield; according to Messrs. Weddel the principal cold stores in the United Kingdom, suitable for the storage of frozen meat, have a total insulated capacity of approximately 250,000 tons of meat, of which about 100,000 tons can be stored in London and about 150,000 tons in the provinces. Making allowance for the space ordinarily required for the storage of other perishable produce, the frozen meat trade's requirements had to be covered by the remaining space, say 187,000 tons, which was equivalent to more than ten weeks' arrivals, even on the basis of the record imports of 1921.

Sir Joseph Cook, High Commissioner for Australia, gave some striking details, when speaking in London, concerning cold storage in the Empire. In Australia nearly £7,000,000 had been invested in refrigerating plant and land and buildings required for the industry, and more than 10,000 persons are employed in it. In 1903 the value of the exports of mutton and lamb from the Commonwealth was £492,000; ten years later it had risen to £3,500,000, and in 1920 to £5,500,000. Of the total quantity exported from Australia the United Kingdom took 93 per cent.

The general development of cold storage for trade purposes in recent years has been very great, and the result has been largely due to scientific men and their research work in connection with problems affecting the refrigeration of food products.

One of the most interesting and important of all the aspects of the imported meat industry is the advance which has been made and is being made in the means of ocean transport. Supplementing references already made to this subject may be Messrs. Weddel's statement that in 1921 there were 280 British refrigerated steamers, with a capacity of about 600,000 tons of meat, compared with 272 steamers and a capacity of 550,000 tons in the previous year. In addition there were thirty-five steamers under construction which, when completed, would add largely to the British refrigerated tonnage. The steamers referred to formed a list which included only vessels having a carrying capacity of over 100 tons of meat. A large number of these steamers had space suitable for the carriage of either frozen or chilled meat. One, the *Duquesa*, had the enormous capacity of 470,000 cubic ft., and there were many others with only slightly inferior accommodation. This list alone was an indication of the rapidity of the growth of the overseas trade in meat, and showed also the very great energy, ingenuity, and foresight which had been brought to bear in connection with the development of a very modern industry. Truly the growth and handling of the imported meat trades is one of the romances of present-day businesses and one which, however greatly it may have benefited its pioneers and followers, has been no less beneficial to the general community.

As to Australasian freights the current rates on frozen meat in 1921 were—

	Mutton per lb.	Lamb per lb.	Frozen Beef per lb.	Chilled Beef per lb.
Australia	1⅝d.	1⅜d.	1⅜d.	—
New Zealand	1⅜d.+2½%	1¾d. +2½%	1⅜d.+2½%	—
River Plate	1d.	1d.	1d.	1d.+15%
Brazil	—	—	1d.	—
Patagonia	1¾d.	1¾d.	—	—

The quotations clearly show the handicap under which the Australian and New Zealand shippers laboured in competition with South American shippers. Before the war the corresponding rates were less than half as much all round, so that the actual handicap on the pound weight of meat imported was much greater than in 1913-14—say $\frac{3}{8}$d. to $\frac{3}{4}$d. per lb., against $\frac{1}{8}$d. to $\frac{1}{4}$d.

About 40 per cent of the mutton, lamb, and frozen beef, and rather less than one-third of the chilled beef imported into the United Kingdom in 1921 were landed at Liverpool and other out-ports. Most of the chilled beef which was discharged at Liverpool and Southampton was railed to London for sale. Generally speaking, accommodation at the out-ports was adequate, and there was little or no delay to steamers; but London was the best market.

Continental markets for imported meat furnish an interesting study; but in no foreign country is the demand for this class of food comparable with that of Great Britain. During 1921 the Continental markets fluctuated greatly, and there was a considerable falling off in the direct and indirect shipments of frozen meat, including pork. The total was about 186,000 tons, compared with 300,000 tons in 1920—a reduction of 38 per cent. French butchers never took kindly to frozen meat, owing to the authorities' insisting that all imported meat should be divided into categories and sold under separate labels, at maximum selling prices, fixed by the authorities. The fresh meat trade was not harassed by these regulations, the result being that as soon as the wholesale prices of fresh meat were reduced to reasonable levels the butcher had no further interest in the frozen article and did his best to discourage its sale.

A clear impression of the vastness and importance of

		Beef.		Mutton and Lamb.		Total.	Percentage of Total Importation.	Percentage of Total Consumption.
		Tons.		Tons.		Tons.		
Frozen	Australia	83,857	—	20,875	—	104,732	11·10	5·24
	New Zealand	40,978	—	222,687	—	263,665	27·94	13·18
	Argentine	237,723	—	71,597	—	309,320	32·77	15·46
	Uruguay	47,114	—	6,579	—	53,693	5·69	2·69
	Brazil	6,603	—	—	—	6,603	0·70	0·33
	Chili (Patagonia)[1]	—	—	14,348	—	14,348	1·52	0·72
	North America	11,646	—	815	—	12,461	1·32	0·62
	South Africa	1,207	—	—	—	1,207	0·13	0·06
	Other Countries	941	—	34	—	975	0·10	0·05
	Total Frozen	—	430,069	—	336,935	767,004	81·28	38·35
Chilled	Argentina	136,272	—	—	—	—	—	—
	Uruguay	13,400	—	—	—	—	—	—
	North America	738	—	—	—	—	—	—
	Total Chilled	—	150,410	—	—	150,410	15·94	7·52
	Total Frozen and Chilled	—	580,479	—	336,935	917,414	97·22	45·87
Foreign Fresh Killed		—	1,039	—	3,573	4,612	0·49	0·23
,, Livestock		—	21,431	—	287	21,718	2·29	1·08
Total Importations into the U.K.		—	602,949	—	340,795	943,744	100·00	47·18
Home Grown (*Estimated*)			796,400	—	260,000	1,056,400		52·82
Total Consumption in U.K.		—	1,339,349	—	600,795	2,000,144	—	100·00

[1] Importations from the Argentine part of Patagonia are included in the Argentine total.

the meat industry is conveyed by the table on the opposite page, prepared by Messrs. Weddel, analysing the sources of supply of beef, mutton, and lamb available for consumption in the United Kingdom in 1921.

The world's output of frozen and chilled meat exported in 1921 was 970,300 tons, of which the total British Dominions output was 312,700 tons ; but even these enormous quantities fell below the totals for 1917, 1918, 1919 and 1920, for the world's output in each of those years exceeded 1,000,000 tons, the figures for 1918 being 1,162,100 tons.

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